CURRICULUM VITAE

Ioannis Pavlidis
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Computational Physiology Laboratory, Director

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Degrees

University of Minnesota, Minneapolis, Minnesota
Ph.D. in Computer Science, December 1996

University of Minnesota, Minneapolis, Minnesota
M.S. in Computer Science, September 1995

University of London, Imperial College, London, United Kingdom
M.S. in Robotics and Automation, February 1989

Democritus University of Thrace, Xanthi, Greece
B.S. in Electrical Engineering (Summa cum Laude), June 1987

Research Interests

Physiological Basis of Human Behavior, Human-Computer Interaction, Mobile Computing, Medical Imaging

Career Highlights in Pictures

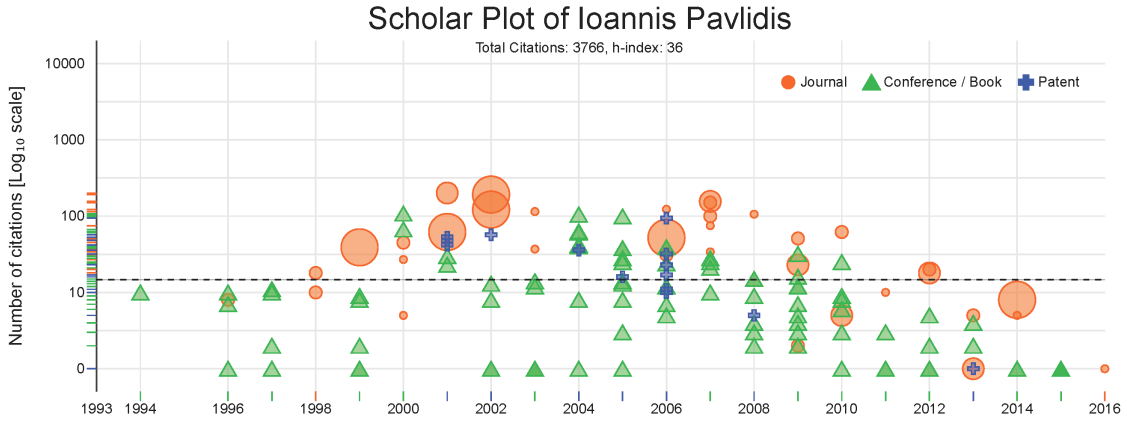

Figure 1: Journal/conference publications and patents vs. citation counts; the area of each disk is commensurate to the Impact Factor of the corresponding journal (2015 Journal Citation Reports); the h-index line is dotted.

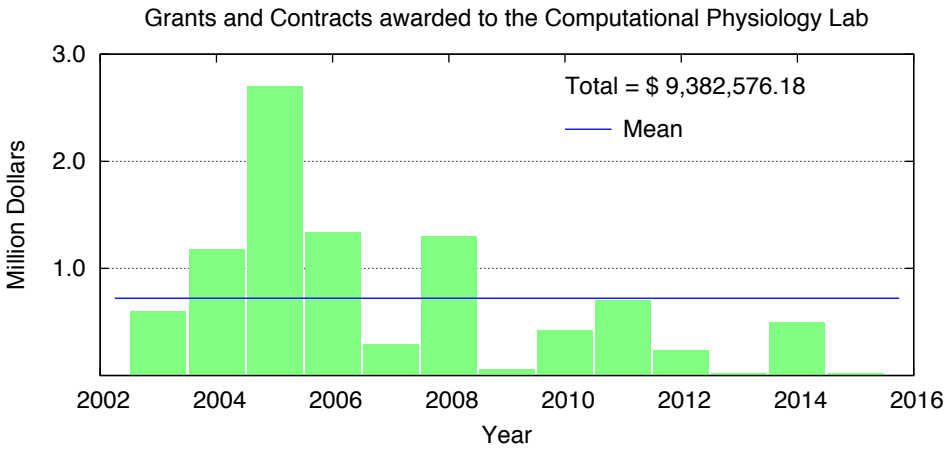

Figure 2: Funding graph for the last decade; grant amount for each award was recorded in its entirety at the year the award was made.

Career Highlights in Words

I consider the most important accomplishment in my career the development of a new discipline, "Computational Psycho-Physiology". In a persistent effort that started in 1999 and continues today, my research has transformed established practices of measuring physiological variables. Probes and wires were replaced with passive imaging, electronic boxes with computers and algorithms, physical measurements with cyber-measurements. The outcome has been transforming sleep studies and psychological evaluations, where persistent and totally non-invasive measurements are required – something that my research brought to life for the first time. Interestingly, these new methods led to discoveries about human nature, not feasible before, such as the localization and understanding of important neurophysiological channels on the face and the role of stress on dexterous skill acquisition. My research has been made possible through the award of a series of highly competitive NSF and DOD grants the last 10 years, totaling over $8 M. The social implications of my work are reflected in the press (from CNN to Discovery Channel) that it received over time.

I deem as my most important quality, my ability to innovate. Most of my main articles are paradigm shifts and for this reason they typically appear in highly selective journals and conference proceedings.

I consider the most meritorious element of my record, the recognition I received across several disciplines. Testaments to this are my publications in major general science (*Nature* and *Scientific Reports*), medical (*NEJM*, *Lancet*, *SLEEP*), and computer science journals (*IEEE PAMI*, *IJCV*). There are few scientists in general, and even fewer computer scientists in particular, who were able to achieve something similar. It is difficult enough for someone to distinguish himself/herself in a specific area, let alone in other areas, as distinct as the ones I traversed.

My record is complemented with imaginative and successful educational efforts, such as the introduction of the first iPhone course in the country, as well as substantial service to the research community. The latter includes the foundation of successful international conferences (*IEEE AVSS*).

Patents

XI. I. Pavlidis. "Imaging facial signs of neuro-physiological responses." U.S. Patent No. 8,401,261, issued March 19, 2013.

X. I. Pavlidis and V. Morellas. "Cooperative camera network." U.S. Patent 7,149,325, issued December 12, 2006.

IX. I. Pavlidis, M.E. Bazakos, and V. Morellas. "Controlled environment thermal image detection system and methods regarding same." U.S. Patent No. 7,138,905, issued November 21, 2006.

VIII. I. Pavlidis and J.A. Levine. "System and method using thermal image analysis and slope threshold classification for polygraph testing." U.S. Patent No. 7,111,980, issued September 26, 2006.

VII. I. Pavlidis. "Near-infrared disguise detection." U.S. Patent No. 7,076,088, issued July 11, 2006.

VI. I. Pavlidis and J.B. Dowdall. "Near-infrared method and system for use in face detection." U.S. Patent No. 7,027,619, issued April 11, 2006.

V. I. Pavlidis. "Detection system and method using thermal image analysis." U.S. Patent No. 6,996,256, issued February 7, 2006.

IV. I. Pavlidis. "System and method using thermal image analysis for polygraph testing." U.S. Patent No. 6,854,879, issued February 15, 2005.

III. I. Pavlidis, P.F. Symosek, and B.S. Fritz. "Near-IR human detector." U.S. Patent No. 6,829,370, issued December 7, 2004

II. I. Pavlidis, P.F. Symosek, and B.S. Fritz. "Near-infrared disguise detection." U.S. Patent No. 6,718,049, issued April 6, 2004.

I. I. Pavlidis, P.F. Symosek, and B.S. Fritz. "Near-IR human detector. " U.S. Patent No. 6,370,260, issued April 9, 2002.

Publications

Books and Book Contributions

B15. P. Buddharaju and I. Pavlidis. "Physiology-based face recognition in the thermal infrared spectrum." In *Medical Infrared Imaging – Principles and Practices*, M. Diakides, J.D. Bronzino, and D.R. Peterson, editors, ch. 18, pp. 18-1 - 18-16, CRC Press, 2013.

B14. J.N. Murthy and I. Pavlidis. "Thermal infrared imaging during polysomnography: Has the time come to unwire the 'wired' subjects?" In *Applied Technologies in Pulmonary Medicine*, A.M. Esquinas, editor, pp. 46-50, Karger, 2011.

B13. P. Buddharaju and I. Pavlidis. "Face recognition under the skin." In *Multibiometrics for Human Identification*, B. Bhanu and V. Govindaraju, editors, pp. 74-92, Cambridge University Press, 2011.

B12. T. Bourlai, P. Buddharaju, I. Pavlidis, and B. Bass. "Methodological advances on pulse measurement through functional imaging." In *Computational Surgery and Dual Training*, Advances in Pattern Recognition, M. Garbey, B.L. Bass, C. Collet, M. de Mathelin, and R. Tran-Son-Tay, editors, pp. 101-121, Springer, 2010.

B11. J. Dowdall, I. Pavlidis, and P. Tsiamyrtzis. "Coalitional Tracker for Deception Detection in Thermal Imagery." In *Augmented Vision Perception in Infrared: Algorithms and Applied Systems*, Advances in Pattern Recognition, R.I. Hammoud, editor, ch. 5, pp. 113-137, Springer-Verlag, 2009.

B10. P. Buddharaju, I. Pavlidis, and C. Manohar. "Face recognition beyond the visible spectrum." In *Advances in Biometrics: Sensors, Algorithms and Systems*, N.K. Ratha and and V. Govindaraju, editors, ch.9, pp. 157-180, Springer, October 2007.

B9. P. Buddharaju and I. Pavlidis. "Physiology-based face recognition in the thermal infrared spectrum." In *Medical Infrared Imaging*, N.A. Diakides and J.D. Bronzino, editors, Taylor and Francis Books, July 2007.

B8. P. Buddharaju and I. Pavlidis. "Multispectral face recognition – fusion of visual imagery with physiological information." In *Face Biometrics for Personal Identification: Multi-Sensory Multi-Modal Systems*, R.I. Hammoud, B.R. Abidi, and M.A. Abidi, editors, pp. 91-108, Springer, 2007.

B7. I. Pavlidis, P. Tsiamyrtzis, C. Manohar, and P. Buddharaju. "Biometrics: Face recognition in thermal infrared." In *Biomedical Engineering Handbook*, 3rd Edition, ch. 29, pp. 1-15, CRC Press, 2006.

B6. B. Bhanu and I. Pavlidis. *Computer Vision beyond the Visible Spectrum*, Springer, November 2004.

B5. I. Pavlidis, C. Stathopoulos, and T. Faltesek. "Video-based surveillance for chem-bio protection of buildings." In *Multisensor Surveillance Systems: The Fusion Perspective*, G. L. Foresti, C. Regazzoni, P. Varshney, editors, pp. 97-114, Kluwer Academic Publishers, July 2003.

B4. I. Pavlidis and V. Morellas. "Two examples of indoor and outdoor surveillance systems." In *Video Based Surveillance Systems: Computer Vision and*

Distributed Processing, P. Remagnino, J. A. Graeme, N. Paragios, C. Regazzoni, editors, pp. 39-50, Kluwer Academic Publishers, 2002.

B3. I. Pavlidis, V. Morellas, and P. Roeber. *Programming Cameras and Pan-Tilts with DirectX and Java*, Morgan Kaufmann, San Francisco, California, December 2002.

B2. M. J. Sullivan, N. Papanikolopoulos, R. Singh, and I. Pavlidis. "Using active deformable models in robotic visual servoing." In *Control in Robotics and Automation: Sensor-Based Integration*, B. K. Ghosh, N. Xi, T. J. Tarn, editors, pp. 91-113, Academic Press, 1999.

B1. I. Pavlidis, M. J. Sullivan, R. Singh, and N.P. Papanikolopoulos, "Improving the performance of deformable-model-based target tracking through automatic selection of control points", in *Robotics and Manufacturing, Recent Trends in Research and Applications*, M. Jamshidi, F. Pin, P. Dauchez, editors, vol. 6, pp. 711-716, ASME Press, New York, New York, 1996.

Papers in Refereed Journals

J33. I. Semendeferi, P. Tsiamyrtzis, M. Dcosta, and I. Pavlidis. "Connecting past with present: A mixed-methods science ethics course and its evaluation." *Science and Engineering Ethics*, vol. 22, no 1, pp. 251-274, 2016. **[Journal Impact Factor: 1.516]**

J32. I. Pavlidis, A.M. Petersen, and I. Semendeferi. "Together we stand." *Nature Physics*, vol. 10, no. 10, pp. 700-702, October 2014. **[Journal Impact Factor: 20.603]**

J31. A.M. Petersen, I. Pavlidis, and I. Semendeferi. "A quantitative perspective on ethics in large team science." *Science and Engineering Ethics*, vol. 20, no 4, pp. 923-945, 2014. **[Journal Impact Factor: 1.516]**

J30. Y. Zhou, P. Tsiamyrtzis, I. Timofeyev, P. Lindner, and I. Pavlidis. "Spatio-temporal smoothing as a basis for facial tissue tracking in thermal imaging." *IEEE Transactions on Biomedical Engineering*, vol. 60, no. 5, pp. 1280-1289, May 2013. **[Journal Impact Factor: 2.233]**

J29. D. Shastri, M. Papadakis, P. Tsiamyrtzis, B. Bass, and I. Pavlidis. "Perinasal imaging of physiological stress and its affective potential." *IEEE Transactions on Affective Computing*, vol. 3, no. 3, pp. 366-378, July-September 2012. **[Journal Impact Factor: 3.466]**

J28. I. Pavlidis, P. Tsiamyrtzis, D. Shastri, A. Wesley, Y. Zhou, P. Lindner, P. Buddharaju, R. Joseph, A. Mandapati, B. Dunkin, and B. Bass. "Fast by nature – How stress patterns define human experience and performance in dexterous

tasks." *Scientific Reports*, vol. 2, March 6, 2012. DOI:10.1038/srep00305 **[Journal Impact Factor: 5.078]**

J27. C.U. Manohar, S.K. McCrady, Y. Fujiki, I.T. Pavlidis, and J.A. Levine. "Evaluation of the accuracy of a triaxial accelerometer embedded into a cell phone platform for measuring physical activity." *Journal of Obesity and Weight Loss Therapy*, vol. 1, no. 1, December 20, 2011. doi:10.4172/2165-7904.1000106 **[Journal Impact Factor: TBA]**

J26. J. Fei and I. Pavlidis. "Thermistor at a distance: Unobtrusive measurement of breath." *IEEE Transactions on Biomedical Engineering*, vol. 57, no. 4, pp. 988-998, April 2010. **[Journal Impact Factor: 2.233]**

J25. J.A. Levine, I.T. Pavlidis, L. MacBride, Z. Zhu, and P. Tsiamyrtzis. "Description and clinical studies of a device for the instantaneous detection of office-place stress." *WORK: A Journal of Prevention, Assessment, and Rehabilitation*, vol. 34, no. 3, pp. 359-364, November 2009. **[Journal Impact Factor: 0.513]**

J24. C. Manohar, S. McCrady, I.T. Pavlidis, and J.A. Levine. "An accelerometer-based earpiece to monitor and quantify physical activity." *Journal of Physical Activity and Health*, vol. 6, no. 6, pp. 781-789, November 2009. **[Journal Impact Factor: TBA]**

J23. J.N. Murthy, J van Jaarsveld, J. Fei, I. Pavlidis, R.I. Harrykissoon, J.F. Lucke, and R.J. Castriotta. "Thermal Infrared Imaging: A novel method to monitor airflow during polysomnography." *SLEEP*, vol. 32, no. 11, pp. 1521-1527, November 2009. **[Journal Impact Factor: 5.062]**

J22. D. Shastri, A. Merla, P. Tsiamyrtzis, and I. Pavlidis. "Imaging facial signs of neurophysiological responses." *IEEE Transactions on Biomedical Engineering*, vol. 56, no. 2, pp. 477-484, February 2009. **[Journal Impact Factor: 2.233]**

J21. Y. Fujiki, K. Kazakos, C. Puri, P. Buddharaju, I. Pavlidis, and J. Levine. "NEAT-o-Games: Blending physical activity and fun in the daily routine." *ACM Computers in Entertainment*, vol. 6, no. 2, April/June 2008. **[Journal Impact Factor: TBA]**

J20. I. Pavlidis, J. Dowdall, N. Sun, C. Puri, J. Fei, and M. Garbey. "Interacting with human physiology." *Computer Vision and Image Understanding*, vol. 108, no. 1-2, pp. 150-70, October-November 2007. **[Journal Impact Factor: 1.232]**

J19. M. Garbey, N. Sun, A. Merla, and I. Pavlidis. "Contact-free measurement of cardiac pulse based on the analysis of thermal imagery." *IEEE Transactions on Biomedical Engineering*, vol. 54, no. 8, pp. 1418-26, August 2007. **[Journal Impact Factor: 2.348]**

J18. J. Dowdall, I.T. Pavlidis, and P. Tsiamyrtzis. "Coalitional tracking." *Computer Vision and Image Understanding*, vol. 106, no. 2-3, pp. 205-219, May-June 2007. **[Journal Impact Factor: 1.358]**

J17. P. Buddharaju, I.T. Pavlidis, P. Tsiamyrtzis, and M. Bazakos. "Physiology-based face recognition in the thermal infrared spectrum." *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 29, no. 4, pp. 613-626, April 2007. **[Journal Impact Factor: 5.694]**

J16. P. Tsiamyrtzis, J. Dowdall, D. Shastri, I.T. Pavlidis, M.G. Frank, and P. Ekman. "Imaging facial physiology for the detection of deceit." *International Journal of Computer Vision*, vol. 71, no. 2, pp. 197-214, February 2007. **[Journal Impact Factor: 3.533]**

J15. D.A. Pollina, A.B. Dollins, S.M. Senter, T.E. Brown, I. Pavlidis, J.A. Levine, and A.H. Ryan. "Facial skin surface temperature changes during a "Concealed Information" test." *Annals of Biomedical Engineering*, vol. 34, no. 7, pp. 1182-1189, 2006. **[Journal Impact Factor: 3.231]**

J14. G. Bebis, A. Gyaourova, S. Singh, and I. Pavlidis. "Face recognition by fusing thermal infrared and visible imagery." *Image and Vision Computing*, vol. 24, no. 7, pp. 727-742, July 1, 2006. **[Journal Impact Factor: 1.581]**

J13. R. Murthy and I. Pavlidis. "Noncontact measurement of breathing function." *IEEE Engineering in Medicine and Biology Magazine*, vol. 25, no 3, pp. 57-67, May-June 2006. **[Journal Impact Factor: 26.303]**

J12. I. Pavlidis and B. Bhanu. "Guest editorial: special issue on computer vision beyond the visible spectrum." *Image and Vision Computing*, vol. 21, pp. 563-564, July 1, 2003. **[Journal Impact Factor: 1.581]**

J11. J. Dowdall, I. Pavlidis, and G. Bebis. "Face detection in the near-IR spectrum." *Image and Vision Computing*, vol. 21, pp. 565-78, July 1, 2003. **[Journal Impact Factor: 1.581]**

J10. V. Morellas, I. Pavlidis, and P. Tsiamyrtzis. "Deter: Detection of events for threat evaluation and recognition." *Machine Vision and Applications*, vol. 15, no. 1, pp. 29-45, October 2003. **[Journal Impact Factor: 1.444]**

J9. I. Pavlidis and J. Levine. "Thermal image analysis for polygraph testing." *IEEE Engineering in Medicine and Biology Magazine*, vol. 21, no. 6, pp. 56-64, November-December 2002. **[Journal Impact Factor: 26.303]**

J8. I. Pavlidis, N.L. Eberhardt, and J. Levine. "Human behavior: seeing through the face of deception." *Nature*, vol. 415, no. 6867, pp. 35, January 3, 2002. **[Journal Impact Factor: 42.351]**

J7. I. Pavlidis, V. Morellas, P. Tsiamyrtzis, and S. Harp. "Urban surveillance systems: From the laboratory to the commercial world." *Proceedings of the IEEE*, vol. 89, no. 10, pp. 1478-1497, October 2001. **[Journal Impact Factor: 5.466]**

J6. J. Levine, I. Pavlidis, and M. Cooper. "The face of fear." *The Lancet*, vol. 357, no. 9270, pp. 1757, June 2, 2001. **[Journal Impact Factor: 39.207]**

J5. I. Pavlidis, P. Symosek, B. Fritz, M. Bazakos, and N. Papanikolopoulos. "Automatic detection of vehicle occupants - the imaging problem and its solution." *Machine Vision and Applications*, vol. 11, no. 6, pp. 313-320, 2000. **[Journal Impact Factor: 1.444]**

J4. I. Pavlidis, V. Morellas, P. Symosek, and N. Papanikolopoulos. "A vehicle occupant counting system based on near-infrared phenomenology and fuzzy neural classification." *IEEE Transactions on Intelligent Transportation Systems*, vol. 1, no. 2, pp. 72-85, June, 2000. **[Journal Impact Factor: 2.472]**

J3. J. Levine, P. Baukol, and I. Pavlidis. "The energy expended in chewing gum." *The New England Journal of Medicine*, vol. 341, no. 27, pp. 2100, 1999. **[Journal Impact Factor: 54.420]**

J2. I. Pavlidis, R. Singh, and N. Papanikolopoulos. "Online handwriting recognition using physics-based shape metamorphosis." *Pattern Recognition*, vol. 31, no. 11, pp. 1589-1600, 1998. **[Journal Impact Factor: 2.584]**

J1. I. Pavlidis, N.P. Papanikolopoulos, and R. Mavuduru. "Signature identification through the use of deformable structures." *Signal Processing*, vol. 71, no. 2, pp. 187-201, 1998. **[Journal Impact Factor: 2.238]**

Note: Impact factors were retrieved from the 2014 Journal Citation Reports

Papers and Videos at Refereed Conferences

C79. P. Tsiamyrtzis, M. Dcosta, D. Shastri, E. Prasad, and I. Pavlidis. "Delineating the operational envelope of mobile and conventional EDA sensing on key body locations." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI)*, San Jose, California, May 7 - 12, 2016. **[Acceptance Rate: 23.40%]**

C78. S. Taamneh, M. Dcosta, K. Kwon, and I. Pavlidis. "SubjectBook: Hypothesis driven ubiquitous visualization for affective studies." In *CHI'16 Extended Abstracts on Human Factors in Computing Systems*, San Jose, California, May 7-12, 2016. **[Acceptance Rate: 43.4%]**

C77. A. Ashik, D. Shastri, P. Tsiamyrtzis, I. Uyanik, E. Akleman, and I. Pavlidis. "Effects of simple personalized goals on the usage of a physical activity app." In *CHI'16 Extended Abstracts on Human Factors in Computing Systems*, San Jose, California, May 7-12, 2016. **[Acceptance Rate: 43.4%]**

C.76 M. Dcosta, D. Shastri, P. Tsiamyrtzis, and I. Pavlidis. " Turning security monitoring into an engaging high performance task." In *2016 IEEE International Conference on Technologies for Homeland Security*, Waltham, Massachusetts, May 10-12, 2016.

C75. A. Turchaninova, A. Khatri, I. Uyanik, and I. Pavlidis. "Role model in human physical activity." In *Proceedings of the Conference on Wireless Health – WH'15*, Bethesda, Maryland, October 14-16, 2015. **[Acceptance Rate: 26%]**

C74. M. Ugur, D. Shastri, P. Tsiamyrtzis, M. Dcosta, A. Kalpacki, C. Sharp, and I. Pavlidis. "Evaluating smartphone-based user interface designs for a 2D psychological questionnaire." In *Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing – Ubicomp 2015*, pp. 275-282, Osaka, Japan, September 7-11, 2015. **[Acceptance Rate: 22%]**

C73. M. Dcosta, D. Shastri, and I. Pavlidis. "Perinasal indicators of malevolence." In *11th IEEE Conference on Automatic Face and Gesture Recognition – FG 2015*, Ljubljana, Slovenia, May 4-8, 2015.

C72. M. Dcosta, D. Shastri, R. Vilalta, J.K. Burgoon, and I. Pavlidis. "Perinasal indicators of deceptive behavior." In *11th IEEE Conference on Automatic Face and Gesture Recognition – FG 2015*, Ljubljana, Slovenia, May 4-8, 2015. **[Acceptance Rate: 14%]**

C71. I. Uyanik, A. Khatri, D. Majeti, M. Ugur, D. Shastri, and I. Pavlidis. "Using accelerometer data to estimate surface incline and its walking app potential." In *CHI'15 Extended Abstracts on Human Factors in Computing Systems*, Seoul, South Korea, April 18-23, 2015. **[Acceptance Rate: 45%]**

C70. K. Kwon, D. Shastri, and I. Pavlidis. "Information visualization in affective user studies." In *IEEE VIS 2014*, Paris, France, November 9-14, 2014.

C69. I. Uyanik, A. Khatri, P. Tsiamyrtzis, and I. Pavlidis. "Design and usability of an ozone mapping app." In *Proceedings of the Wireless Health 2014 on National Institutes of Health*, pp. 1-7, Bethesda, Maryland, October 29-31, 2014. **[Acceptance Rate: 25.0%]**

C68. K. Kwon, D. Shastri, and I. Pavlidis "Interfacing information in affective user studies." In 2014 *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2014)*, Seattle, Washington, September 15-17, 2014.

C67. I. Uyanik, D. Price, P. Tsiamyrtzis, and I. Pavlidis. "Interfacing real-time ozone information." In Proceedings of the *1st ACM SIGSPATIAL International Workshop on MapInteraction*, pp. 20-23, Orlando, Florida, November 5, 2013.

C66. I. Uyanik, P. Lindner, P. Tsiamyrtzis, D. Shah, N.V. Tsekos, and I.T. Pavlidis. "Applying a level set method for resolving physiologic motions in free-breathing and non-gated cardiac MRI." In *Functional Imaging and Modeling of the Heart – FIMH 2013*, Lecture Notes in Computer Science, vol. 7945, pp. 466-473, 2013.

C65. D. Duong, D. Shastri, P. Tsiamyrtzis, and I. Pavlidis. "Spatiotemporal reconstruction of the breathing function." *Medical Image Computing and Computer Assisted Intervention – MICCAI 2012*, Lecture Notes in Computer Science, vol. 7510, pp. 149-156, 2012. **[Acceptance Rate: 31.8%]**

C64. A. Wesley, P. Buddharaju, R. Pienta, and I. Pavlidis. "A comparative analysis of thermal and visual modalities for automated facial expression recognition." In *Advances in Visual Computing*, Springer Berlin Heidelberg, pp. 51-60, 2012. **[Acceptance Rate: 50%]**

C63. Y. Zhou, S. Zhang, N. Tsekos, I. Pavlidis, and D. Metaxas. "Left endocardial tracking via collaborative trackers and shape prior." In *9th International Symposium on Biomedical Imaging (ISBI) 2012*, Barcelona, Spain, May 2-5, 2012. **[Acceptance Rate: 60%]**

C62. A. Wesley, P. Lindner, and I. Pavlidis. "Eustressed or distressed? Combining physiology with observation in user studies." In *CHI'12 Extended Abstracts on Human Factors in Computing Systems*, pp. 327-330, Austin, Texas, May 5-10, 2012. **[Acceptance Rate: 50%]**

C61. Y. Zhou, N. Tsekos, and I.T. Pavlidis. "Cardiac MRI intervention and diagnosis via deformable collaborative tracking." In *Functional Imaging and Modeling of the Heart – FIMH 2011*, pp. 188-194, Springer Berlin Heidelberg, 2011. **[Acceptance Rate: 25%]**

C60. P. Buddharaju, D. Shastri, A. Mandapati, S. Vaidya, and I. Pavlidis. "Who said monitoring is boring?" In *CHI'11 Extended Abstracts on Human Factors in Computing Systems*, pp. 2041-2046, Vancouver, British Columbia, May 7 - 12, 2011. **[Acceptance Rate: 43.0%]**

C59. Y. Zhou, E. Yeniaras, P. Tsiamyrtzis, N. Tsekos, and I. Pavlidis. "Collaborative tracking for MRI-guided intervention on the beating heart." In *Medical Image Computing and Computer Assisted Intervention – MICCAI 2010*, Lecture Notes in Computer Science, vol. 6363, pp. 351-358, 2010. **[Acceptance Rate: 32.0%]**

C58. A. Wesley, D. Shastri, and I. Pavlidis. "A novel method to monitor driver's distractions." In *CHI'10 Extended Abstracts on Human Factors in Computing*

Systems, pp. 4273-4278, Atlanta, Georgia, April 10 - 15, 2010. **[Acceptance Rate: 57.0%]**

C57. P. Buddharaju, Y. Fujiki, I. Pavlidis, and E. Akleman. "A novel way to conduct human studies and do some good." In *CHI'10 Extended Abstracts on Human Factors in Computing Systems*, pp. 4699-4702, Atlanta, Georgia, April 10 - 15, 2010. **[Acceptance Rate: 24.5%]**

C56. D. Shastri, Y. Fujiki, R. Buffington, P. Tsiamyrtzis, and I. Pavlidis. "O job, can you return my mojo? Improving human engagement and enjoyment in routine activities." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI)*, pp. 2491-2498, Atlanta, Georgia, April 10 - 15, 2010. **[Acceptance Rate: 22.0%]**

C55. J. Fei, I. Pavlidis, and J. Murthy. "Thermal vision for sleep apnea monitoring." In *Medical Image Computing and Computer Assisted Intervention – MICCAI 2009*, Lecture Notes in Computer Science, vol. 5762, pp. 1084-1091, 2009. **[Acceptance Rate: 27.0%]**

C54. Y. Zhou, P. Tsiamyrtzis, and I. Pavlidis. "Tissue tracking in thermo-physiological imagery through spatio-temporal smoothing." In *Medical Image Computing and Computer Assisted Intervention – MICCAI 2009*, Lecture Notes in Computer Science, vol. 5762, pp. 1092-1099, 2009. **[Acceptance Rate: 27.0%]**

C53. D. Shastri and I. Pavlidis. "Automatic initiation of the periorbital signal extraction in thermal imagery." In *6th IEEE International Conference on Advanced Video and Signal Based Surveillance – AVSS'09*, pp. 182-187, Genoa, Italy, September 1-3, 2009.

C52. D. Shastri, I. Pavlidis, and A. Wesley. "A method for monitoring operator overloading." In *Human-Computer Interaction. New Trends*, pp.169-175, Springer Berlin Heidelberg, 2009.

C51. P. Buddharaju and I. Pavlidis. "Physiological face recognition is coming of age." In *IEEE Conference on Computer Vision and Pattern Recognition – CVPR 2009*, pp. 128-135, Miami Beach, Florida, June 20-25, 2009. **[Acceptance Rate: 22.1%]**

C50. Y. Fujiki, P. Tsiamyrtzis, and I. Pavlidis. "Making sense of accelerometer measurements in pervasive physical activity applications." In *CHI'09 Extended Abstracts on Human Factors in Computing Systems*, pp. 3425-3430, Boston, Massachusetts, April 4 - 9, 2009. **[Acceptance Rate: 25.0%]**

C49. C. Yun, D. Shastri, I. Pavlidis, and Z. Deng. "O'game, can you feel my frustration? Improving user's gaming experience via stress-cam." In *Proceedings of the SIGCHI Conference on Human Factors in Computing*

Systems, pp. 2195-2204, Boston, Massachusetts, April 4 - 9, 2009. **[Acceptance Rate: 25.0%]**

C48. Y. Zhou, P. Tsiamyrtzis, and I. Pavlidis. "A probabilistic template update method for tracking facial tissue in thermal infrared." In *5th IEEE International Conference on Advanced Video and Signal Based Surveillance – AVSS'08*, pp. 99-106, Santa Fe, New Mexico, September 1-3, 2008.

C47. Z. Zhu, P. Tsiamyrtzis, and I. Pavlidis. "The segmentation of the supraorbital vessels in thermal imagery." In *5th IEEE International Conference on Advanced Video and Signal Based Surveillance – AVSS'08*, pp. 237-244, Santa Fe, New Mexico, September 1-3, 2008.

C46. K. Kazakos, Y. Fujiki, I. Pavlidis, T. Bourlai, and J. Levine. "NEAT-o-Games: Novel mobile gaming versus modern sedentary lifestyle." In *Proceedings of the 10th International Conference on Human Computer Interaction with Mobile Devices and Services*, pp. 515-518, Amsterdam, Netherlands, September 2-5, 2008.

C45. D. Shastri, P. Tsiamyrtzis, and I. Pavlidis. "Periorbital thermal signal extraction and applications." In *30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pp. 102-105, Vancouver, British Columbia, August 20-25, 2008.

C44. K. Kazakos, Y. Fujiki, C. Puri, P. Buddharaju, I. Pavlidis, and J. Levine. "NEAT-o-Games: Exertion interfaces interwoven in daily life." In *Proceedings of the 2008 ACM Workshop on Exertion Interfaces*, Florence, Italy, April 6, 2008.

C43. D. Shastri, A. Merla, P. Tsiamyrtzis, and I. Pavlidis. "Imaging facial signs of neuro-physiological responses." In *Proceedings of the 10th International Conference on Medical Image Computing and Computer-Assisted Intervention-MICCAI*, Brisbane, Australia, October 29 – November 2, 2007.

C42. P. Buddharaju, Y. Fujiki, K. Kazakos, C. Puri, I. Pavlidis, and J. Levine. "NEAT-o-Games: Ubiquitous game changes modern sedentary lifestyle." In *Video Proceedings of the 9th International Conference on Ubiquitous Computing*, Innsbruck, Austria, September 16-19, 2007.

C41. Z. Zhu, P. Tsiamyrtzis, and I. Pavlidis. "Forehead thermal signature extraction in lie detection." In *29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pp. 243-246, Lyon, France, August 23-26, 2007.

C40. J. Fei and I. Pavlidis. "Virtual thermistor." In *29th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pp. 250-253, Lyon, France, August 23-26, 2007.

C39. Y. Fujiki, K. Kazakos, C. Puri, J. Starren, I. Pavlidis, and J. Levine. "NEAT-o-Games: Ubiquitous activity-based gaming." In *CHI'07 Extended Abstracts on Human Factors in Computing Systems*, pp. 2369-2374, San Jose, California, April 28 - May 3, 2007. **[Acceptance Rate: 25.0%]**

C38. Y. Fujiki, K. Kazakos, C. Puri, J. Starren, I. Pavlidis, and J. Levine. "NEAT-o-Games: Ubiquitous computing meets exertion interfaces." In *Proceedings of the 2007 ACM Workshop on Exertion Interfaces*, San Jose, California, April 29, 2007.

C37. N. Sun, I. Pavlidis, M. Garbey, and J. Fei. "Harvesting the thermal cardiac pulse signal." In *Medical Image Computing and Computer-Assisted Intervention-MICCAI 2006*, Lecture Notes in Computer Science, vol. 4191, pp. 569-576, 2006.

C36. J. Fei and I. Pavlidis. "Analysis of breathing air flow patterns in thermal imaging." In *28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society,* pp. 946-952, New York, New York, August 30 - September 3, 2006.

C35. N. Sun and I. Pavlidis. "Counting heartbeats at a distance." In *28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society,* pp. 228-231, New York, New York, August 30 - September 3, 2006.

C34. C. Puri, P. Buddharaju, N. Sun, D. and I. Pavlidis. "Physio-Vision with ATHEMOS." In *Video Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition*, New York, New York, June 17-22, 2006.

C33. J. Dowdall, I.T. Pavlidis, and P. Tsiamyrtzis. "Coalitional tracking in facial infrared imaging and beyond." In *IEEE Computer Vision and Pattern Recognition Workshop – CVPRW'06,* pp. 134-141, New York, New York, June 17-22, 2006.

C32. P. Buddharaju, I.T. Pavlidis, and P. Tsiamyrtzis. "Pose-invariant physiological face recognition in the thermal infrared spectrum." In *Computer Vision and Pattern Recognition Workshop – CVPRW'06,* pp. 53-60, New York, New York, June 17-22, 2006.

C31. Z. Zhu, J. Fei, and I. Pavlidis. "Tracking human breath in infrared imaging." In *5th IEEE Symposium on Bioinformatics and Bioengineering*, Minneapolis, Minnesota, pp. 227-231, October 19-21, 2005.

C30. P. Buddharaju, I.T. Pavlidis, and P. Tsiamyrtzis. "Physiology-based face recognition." In *IEEE Conference on Advanced Video and Signal Based Surveillance – AVSS'05*, pp. 354-359, Lake Como, Italy, September 15-16, 2005.

C29. J. Fei, Z. Zhu, and I. Pavlidis, "Imaging breathing rate in the CO_2 absorption band", in *Proceedings of the 27th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pp. 700-705, Shanghai, China, September 1-4, 2005.

C28. N. Sun, M. Garbey, A. Merla, and I. Pavlidis. "Imaging the cardiovascular pulse." In *IEEE Computer Society Conference on Computer Vision and Pattern Recognition – CVPR 2005*, vol. 2, pp. 416-21, San Diego, California, June 20-25, 2005. **[Acceptance Rate: 6.5%]**

C27. P. Buddharaju, J. Dowdall, P. Tsiamyrtzis, D. Shastri, I. Pavlidis, and M. G. Frank. "Automatic THErmal MOnitoring System (ATHEMOS) for deception detection." In *Video Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition – CVPR 2005*, San Diego, California, June 20-25, 2005.

C26. C. Puri, L. Olson, I. Pavlidis, J. Levine, and J. Starren. "StressCam: non-contact measurement of users' emotional states through thermal imaging." In *CHI'05 Extended Abstracts on Human Factors in Computing Systems*, pp. 1725-1728, Portland, Oregon, April 2-7, 2005. **[Acceptance Rate: 25.0%]**

C25. R. Murthy, I. Pavlidis, and P. Tsiamyrtzis. "Touchless monitoring of breathing function." In *26th Annual International Conference* of the *IEEE Engineering in Medicine and Biology Society*, vol. 2, pp. 1196-1199, San Francisco, California, September 1-5, 2004.

C24. P. Buddharaju, I. Pavlidis, and I.A. Kakadiaris. "Face recognition in the thermal infrared spectrum." In *Computer Vision and Pattern Recognition Workshop – CVPRW'04*, Washington, DC, July 2, 2004.

C23. M. Garbey, A. Merla, and I. Pavlidis. "Estimation of blood flow speed and vessel location from thermal video." In *IEEE Computer Society Conference on Computer Vision and Pattern Recognition – CVPR 2004*, vol. 1, pp. 356-363, Washington, DC, June 27 - July 2, 2004. **[Acceptance Rate: 23.6%]**

C22. A. Gyaourova, G. Bebis, and I. Pavlidis. "Fusion of infrared and visible images for face recognition." In *Computer Vision – ECCV 2004*, vol. 4, pp. 456-468, Prague, Czech Republic, May 11-14, 2004.

C21. I. Pavlidis. "Continuous physiological monitoring." In *25th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, vol. 2, pp. 1084-1087, Cancun, Mexico, September 17-21, 2003.

C20. I. Pavlidis and J. Levine. "Thermal facial screening for deception detection." In *24th Annual Conference of the IEEE Engineering in Medicine and Biology Society*, vol. 2, pp. 1143-1144, Houston, TX, October 23-26, 2002.

C19. I. Pavlidis and T. Faltesek. "A video-based surveillance solution for protecting the air-intakes of buildings from chem-bio attacks." In *Proceedings of the 2002 IEEE International Conference on Image Processing*, vol. 1, pp. 501-504, Rochester, NY, September 22-25, 2002.

C18. J. Dowdall, I. Pavlidis, and G. Bebis. "A face detection method based on multi-band feature extraction in the near-IR spectrum." In *Proceedings of the 2001 IEEE Workshop on Computer Vision Beyond the Visible Spectrum: Methods and Applications*, Kauai, Hawaii, December 14, 2001.

C17. I. Pavlidis and J. Levine. "Monitoring of periorbital blood flow rate through thermal image analysis and its application to polygraph testing." In *Proceedings of the 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, vol. 3, pp. 2826-2829, Istanbul, Turkey, October 25-28, 2001.

C16. I. Pavlidis, J. Levine, and P. Baukol. "Thermal image analysis for anxiety detection." In *Proceedings of the 2001 IEEE International Conference on Image Processing*, vol. 2, pp. 315-318, Thessaloniki, Greece, October 7-10, 2001.

C15. I. Pavlidis and V. Morellas. "Two examples of indoor and outdoor surveillance systems: motivation, design, and testing." In *Proceedings of the 2nd European Workshop on Advanced Video-Based Surveillance*, pp. 285-296, London, England, September 4, 2001.

C14. I. Pavlidis, J. Levine, and P. Baukol. "Thermal imaging for anxiety detection." In *Proceedings of the 2000 IEEE Workshop on Computer Vision Beyond the Visible Spectrum: Methods and Applications*, pp. 104-109, Hilton Head Island, South Carolina, June 16, 2000.

C13. I. Pavlidis and P. Symosek. "The imaging issue in an automatic face/disguise detection system." In *Proceedings of the 2000 IEEE Workshop on Computer Vision Beyond the Visible Spectrum: Methods and Applications*, pp. 15-24, Hilton Head Island, South Carolina, June 16, 2000.

C12. I. Pavlidis, P. Symosek, B. Fritz, N. Papanikolopoulos, and K. Schwartz. "Automatic detection of vehicle passengers through near-infrared fusion." In *Proceedings of the 1999 IEEE/IEEJ/JSAI International Conference on Intelligent Transportation Systems*, pp. 304-309, Tokyo, Japan, October 5-7, 1999.

C11. I. Pavlidis, P. Symosek, B. Fritz, and N. Papanikolopoulos. "A near-infrared fusion scheme for automatic detection of vehicle passengers." In *Proceedings of the 1999 IEEE Workshop on Computer Vision Beyond the Visible Spectrum: Methods and Applications*, pp. 41-48, Fort Collins, Colorado, June 21-22, 1999.

C10. I. Pavlidis, D. Perrin, N.P. Papanikolopoulos, W. Au, and S. Sawtelle. "A ground truth tool for synthetic aperture radar (SAR) imagery." In *Proceedings of the 1999 IEEE Workshop on Computer Vision Beyond the Visible Spectrum: Methods and Applications*, pp. 82-87, Fort Collins, Colorado, June 21-22, 1999.

C9. I. Pavlidis, P. Symosek, B. Fritz, R. Sfarzo, and N. Papanikolopoulos. "Automatic passenger counting in the High Occupancy Vehicle Lanes (HOVL)." In *Proceedings of the 1999 Annual Meeting of the Intelligent Transportation Society of America*, Washington, D.C., April 19-22, 1999.

C8. I. Pavlidis and N. Papanikolopoulos. "A curve segmentation algorithm that automates deformable-model-based target tracking." In *Proceedings of the International Conference on Telecommunications*, vol. 4, pp. 177-181, Chalkidiki, Greece, June 21-25, 1998.

C7. I. Pavlidis, R. Singh, and N.P. Papanikolopoulos. "An on-line handwritten note recognition method using shape metamorphosis." In *Proceedings of the Fourth International Conference on Document Analysis and Recognition*, vol. 2, pp. 914-918, Ulm, Germany, August 18-20, 1997.

C6. R. Singh, I. Pavlidis, and N. Papanikolopoulos. "A metamorphosis-based shape recognition method." In *Proceedings of the 13th International Conference on Digital Signal Processing – DSP'97*, vol. 2, pp. 679-682, Santorini, Greece, June 2-4, 1997.

C5. R. Singh, I. Pavlidis, and N.P. Papanikolopoulos. "Recognition of 2D shapes through contour metamorphosis." In *Proceedings of the 1997 IEEE International Conference on Robotics and Animation*, vol. 2, pp. 1651-1656, Albuquerque, New Mexico, April 20-25, 1997.

C4. I. Pavlidis, R. Singh, and N. Papanikolopoulos. "Recognition of on-line handwritten patterns through shape metamorphosis." In *Proceedings of the 13th International Conference on Pattern Recognition*, vol. 3, pp. 18-22, Vienna, Austria, August 25-29, 1996.

C3. I. Pavlidis and N.P. Papanikolopoulos. "Automatic selection of control points for deformable-model-based target tracking." In *Proceedings of the 1996 IEEE International Conference on Robotics and Automation*, vol. 4, pp. 2915-2920, Minneapolis, Minnesota, April 22-28, 1996.

C2. I. Pavlidis and N. Papanikolopoulos. "Application of deformable structures to signature identification." In *Proceedings of the 1995 International Conference on Digital Signal Processing*, vol. 2, pp. 578-583, Limassol, Cyprus, June 26-28, 1995.

C1. I. Pavlidis, R. Mavuduru, and N. Papanikolopoulos. "Off-line recognition of signatures using revolving active deformable models." In *Proceedings of the*

1994 IEEE International Conference on Systems, Man, and Cybernetics, vol. 11, pp. 771-776, San Antonio, Texas, October 2-5, 1994.

Juried Technology Expositions

E3. Monitoring Breathing Function at a Distance, *IEEE Workshop on Applications of Computer Vision* (*WACV '07)*, Austin, Texas, February 21-24, 2007.

E2. Tandem Facial Tracking in Thermal Infrared Video for Physiological Measurements, *IEEE Computer Society Conference on Computer Vision and Pattern Recognition Demonstration Program* (*CVPR 2005)*, San Diego, California, June 23, 2005.

E1. ATHEMOS – Automatic Thermal Monitoring System, *Nextfest 2004*, San Francisco, California, May 14-16, 2004.

Invited Conference Papers

I6. P. Tsiamyrtzis, J. Dowdall, D. Shastri, I. Pavlidis, M.G. Frank, and P. Ekman. "Lie detection - recovery of the periorbital signal through tandem tracking and noise suppression in thermal facial video." In *Proceedings of SPIE Sensors, and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Security and Homeland Defense IV*, E. M. Carapezza, editors, vol. 5778, Orlando, Florida, March 29-31, 2005.

I5. J. Dowdall, I. Pavlidis, and J. Levine. "Thermal image analysis for detecting facemask leakage." In *Proceedings of SPIE Thermosense XXVII*, G. R. Peacock, D. P. Burleigh, J. J. Miles, editors, vol. 5782, pp. 46-53, Orlando, Florida, March 29-31, 2005.

I4. I. Pavlidis. "Lie detection using thermal imaging." In *Proceedings of SPIE Thermosense XXVI*, D. P. Burleigh, K. E. Cramer, G. R. Peacock, editors, vol. 5405, pp. 270-279, Orlando, Florida, April 13-15, 2004.

I3. S. Singh, A. Gyaourova, G. Bebis, and I. Pavlidis. "Infrared and visible image fusion for face recognition." In *Proceedings of SPIE Biometric Technology for Human Identification*, vol. 5404, Orlando, Florida, April 12-13, 2004.

I2. A.H. Ryan, Jr., I. Pavlidis, J.W. Rohrbaugh, F. Marchak, and F.A. Kozel. "Credibility assessments: Operational issues and technology impact for law enforcement applications." In *Proceedings of SPIE – The International Society for Optical Engineering*, Sensors and Command, Control, Communications, and Intelligence (C3I) Technologies for Homeland Defense and Law Enforcement II, vol. 5071, pp.168-182, Orlando, Florida, April 21-25, 2003.

I1. J.B. Dowdall, I. Pavlidis, and G. Bebis. "Face detection in the near-IR spectrum." In *Proceedings of SPIE Infrared Technology and Applications XXIX,* vol. 5074, pp. 745-756, Orlando, Florida, April 21-25, 2003.

Papers at Abstract Based Conferences

A24. S. Taamneh, M. Dcosta, K. Kwon, and I. Pavlidis. "SubjectBook: Web-based visualization of multimodal affective datasets on the cloud" In *Society for Affective Science Conference,* Chicago, Illinois, March 17 – 19, 2016.

A23. D. Majeti, K. Kwon, P. Tsiamyrtzis, and I. Pavlidis. "Dissecting Scholarly Patterns in Biology and Computer Science" In *Science of Team Science (SciTS) 2015 Conference,* Bethesda, Maryland, June 3 – 5, 2015.

A22. S. Taamneh, D. Shastri, D. Currie, M. Dcosta, and I. Pavlidis. "What sympathetic responses can tell about children's performance in reading?" In *Society for Affective Science Conference,* Oakland, California, April 9 – 11, 2015.

A21. Y. Fujiki, I. Uyanik, and I. Pavlidis. "Exploring walking activity at large: Patterns revealed and lessons learned" In *Wireless Health 2014,* Bethesda, Maryland, October 29 – 31, 2014.

A20. I. Semendeferi and I. Pavlidis. "Experiencing ethics at the University of Houston." In *Annual Meeting of the Association for Practical and Professional Ethics,* Jacksonville, Florida, February 27 – March 2, 2014.

A19. I. Semendeferi and I. Pavlidis. "Experiencing science ethics: Living in the present - connecting with the past." In *Annual Meeting of the History of Science Society,* Boston, Massachusetts, November 21-24, 2013.

A18. I. Garza, H. Montakhabi, P. Linder, P. Tsiamyrtzis, J.W. Swanson, L. MacBride, T.A. Krouskop, and I. Pavlidis. "The Face of migraine: Thermal imaging revisited." In *American Academy of Neurology 65th Annual Meeting*, March 16 - 23, 2013, San Diego, California.

A17. J. Murthy, J. Fei, I. Pavlidis, A. Abeulhagia, and R. Castriota**.** "Airflow monitoring in sleep apnea using infrared imaging." In *Abstracts of the American Thoracic Society*, Toronto, Canada, May 18, 2008.

A16. J. Fei and I. Pavlidis. "Thermistor at a distance: Unobtrusive measurement of breathing." In *Abstracts of the 25th Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 78, 2008.

A15. J.N. Murthy, S. Faiz, J. Fei, I. Pavlidis, A. Abeulhagia, and R.J. Castriota**.** "Remote infrared imaging: A novel non-contact method to monitor airflow during polysomnography." In *Chest Meeting Abstracts*, Chest, vol. 132, no. 4, pp. 464, Chicago, Illinois, October 20-25, 2007.

A14. I. Pavlidis. "Looking through the human face." In *Abstracts of the 24th Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 8-9, 2007.

A13. N. Sun, I.T. Pavlidis, M. Garbey, and J. Fei. "Boosting the thermal cardiac pulse signal." In *Abstracts of the 23rd Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 9-10, 2006.

A12. M. Garbey, N. Sun, A. Merla, and I. Pavlidis. "Contact-free measurement of cardiac pulse based on the analysis of thermal imagery." In *Abstracts of the 22nd Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 10-11, 2005.

A11. C. Puri and I. Pavlidis. "StressCam: non-contact measurement of users' emotional states through thermal imaging." In *Abstracts of the 22nd Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 10-11, 2005.

A10. R. Murthy, I. Pavlidis, and P. Tsiamyrtzis. "Touchless monitoring of breath function." In *Abstracts of the 22nd Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 10-11, 2005.

A9. C. Manohar and I. Pavlidis. "Extraction of superficial vasculature in thermal imaging." In *Abstracts of the 22nd Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 10-11, 2005.

A8. P. Buddharaju, I. Pavlidis, and I. A. Kakadiaris. "Face recognition in the thermal infrared spectrum." In *Abstracts of the 22nd Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 10-11, 2005.

A7. P. Tsiamyrtzis, J. Dowdall, D. Shastri, I. Pavlidis, M. G. Frank, and P. Ekman. "Lie detection: recovery of the periorbital signal through tandem tracking and noise suppression in thermal facial video." In *Abstracts of the 22nd Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 10-11, 2005.

A6. I. Pavlidis, A. Merla, C. Puri, J. Fei, and J. Dowdall. "Bioheat modeling and its application to psychophysiology." In *Abstracts of the American Psychological Association Annual Meeting*, Honolulu, Hawaii, July 28 - August 1, 2004.

A5. P. Buddharaju, I. Pavlidis, and I. A. Kakadiaris. "Face recognition in the infrared spectrum." In *Abstracts of the 21st Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 12-14, 2004.

A4. M. Garbey, A. Merla, and I. Pavlidis. "Estimation of blood flow rate and vessel location from thermal video." In *Abstracts of the 21st Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 12-14, 2004.

A3. I. Pavlidis. "The computer as a guardian angel." In *Abstracts of the 20th Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, April 3-4, 2003.

A2. I. Pavlidis and J. Levine. "Thermal image analysis for polygraph testing." In *Abstracts Symposium on Emerging Technologies in Credibility Assessment*, Montreal, Quebec, July 29 - August 3, 2002.

A1. I. Pavlidis and N. Papanikolopoulos. "Counting car passengers in the HOVL." In *Abstracts CTS 10th Annual Transportation Research Conference*, pp. 41, St. Paul, Minnesota, May 18-19, 1999.

Technical Reports

T6. P. Tsiamyrtzis, J. Dowdall, D. Shastri, and I. Pavlidis. "Imaging facial physiology for the detection of deceit." *Technical Report UH-CS-05-25*, Computer Science Department, University of Houston, November 22, 2005.

T5. R. Murthy and I. Pavlidis. "Non-contact monitoring of breathing function using infrared imaging." *Technical Report UH-CS-05-09*, Computer Science Department, University of Houston, April 9, 2005.

T4. M. Garbey, N. Sun, A. Merla and I. Pavlidis. "Contact-free measurement of cardiac pulse based on the analysis of thermal imagery." *Technical Report UH-CS-04-08*, Computer Science Department, University of Houston, December 14, 2004.

T3. I. Pavlidis, "Physics-based methodologies for recognizing handwritten signatures, words, and line drawings." *Technical Report TR 96-070*, Computer Science Department, University of Minnesota, 1996.

T2. I. Pavlidis and N. Papanikolopoulos. "A curve segmentation algorithm that automates deformable-model-based target tracking." *Technical Report TR 96-041*, Computer Science Department, University of Minnesota, 1996.

T1. I. Pavlidis, N. Papanikolopoulos, and R. Mavuduru. "Signature identification through the use of deformable structures." *Technical Report TR 95-012*, Computer Science Department, University of Minnesota, 1995.

Selected Press Citations

1. An assortment of press links about the OzoneMap app,

   http://www.cpl.uh.edu/press/ozonemap-press/

2. An assortment of press links about the *Scientific Reports* paper (March 6, 2012),

   http://www.cpl.uh.edu/press/stress-rese/

3. An assortment of press links about the Walk n' Play app,

   http://www.cpl.uh.edu/press/walk_n_play/

4. An assortment of press links about the Sleep Studies research,

   http://www.cpl.uh.edu/press/sleep_studies_press_release/

5. An assortment of press links about NEAT-o-Games,

   http://www.cpl.uh.edu/html/Localuser/neat-o-games/press.html

6. A link to an article by the Wired magazine about my deception detection research, www.wired.com/news/technology/0,1282,65322,00.html

7. An assortment of press links about the NSF project "Interacting with Human Physiology" (Fall 2004), www.cpl.uh.edu/html/modules.php?name=Web_Links&l_op=viewlink&cid=2

8. An assortment of press links about the Nextfest 2004 exhibit (May 14-16, 2004), www.cpl.uh.edu/html/modules.php?name=Web_Links&l_op=viewlink&cid=3

9. A link to the 2001 Honeywell Annual Report featuring my deception detection research, www.cpl.uh.edu/html/modules/Web_Links/press/3/Hon01ShortExcerpt.pdf

10. An assortment of press links about the *Nature* paper (Jan. 3, 2002), www.cpl.uh.edu/html/modules.php?name=Web_Links&l_op=viewlink&cid=5

11. An assortment of press links about the *New England Journal of Medicine* paper (Dec. 29, 1999), www.cpl.uh.edu/html/modules.php?name=Web_Links&l_op=viewlink&cid=6

Grants and Contracts (Grand Total: ~$13.3 M)

University of Houston Period (September 2002 – Now) - **Total: $9,382,576**

Toyota Safety Research Project

Role: Principal Investigator
Sponsors: Toyota Inc.
Performance Period: 01/17/2014 – 01/17/2017
Funding: $503,130
Description: This program explores two different approaches to detecting abnormal vehicle operation events, such as unintended acceleration, and will concurrently evaluate ways to reduce the likelihood of these events and assist the driver in recovering from them. The first approach involves monitoring driver workload and stress through an innovative thermal imaging techniques and via other physiological measures (such as heart rate and respiration rate). The second approach involves monitoring and analyzing vehicle based sensors to predict abnormal operation events. The vehicle-based sensors approach will be conducted using a statistical analysis of vehicle parameters and by developing a model of vehicle sensor data that includes consideration of driving context. Opportunities for fusing the two approaches will also be explored. The findings from the two monitoring approaches will inform a third sequence of research activities, which will involve human factors testing to develop rapid and appropriate feedback mechanisms, warning/message systems, or vehicle-assisted responses to assist the driver. Selected countermeasures will be evaluated to find the most effective means of mitigating abnormal operation events, including unintended acceleration and other potentially hazardous driver-vehicle situations. Simulated, test track, and real-world naturalistic driving experiments, as well as existing datasets, will be used in these evaluations.

Yes we can

Role: Principal Investigator
Sponsors: Arizona State University
Performance Period: 07/01/2015 – 06/30/2016
Funding: $21,000
Description: The Computational Physiology Lab will develop an app for benchmarking teenagers' physical and dexterity fitness levels. The app will be self-guided and involve several steps. Some of these steps will be semi-automated. The app will appear in the App Store and subsequently used by ASU and Mayo Clinic as they see fit for research and outreach purposes.

Massive Open Online Courses (MOOC)

Role: Principal Investigator
Sponsors: University of Houston
Performance Period: 10/01/2013 – 12/31/2016
Funding: $24,000
Description: This program is about the preparation of a massive online course for Coursera: *Mobile Applications with iOS*.

EAGER: The Effect of Stress and the Role of Computer Mediation on Exam Performance

Role: Principal Investigator
Sponsors: National Science Foundation (grant # IIS-1249208)
Performance Period: 08/01/2012 – 07/31/2013
Funding: $193,231
Description: This program uses a novel experimental and methodological framework to measure and understand the role of stress on student performance in exams. Criticality and computer-mediation define the two axes of the experimental space. Specifically, the planned experiments include bi-weekly exams that count for a small percentage of the grade versus midterm and final exams that count for a large percentage of the grade, alternately offered in paper and iPad forms. The methodology is characterized by unobtrusive measurements that span the genetic, physiological, and psychological levels.

EESE: Experiencing Ethics

Role: Principal Investigator
Sponsors: National Science Foundation (grant # IIS-1135357)
Performance Period: 09/01/2011 – 08/31/2015
Funding: $299,325
Description: This education project introduces novel science ethics coursework at the University of Houston (UH) that features three levels, Theoretical/Case Studies/Experiential. The theoretical level identifies and explains central moral issues and principles relevant to research ethics. This is followed by dialectic investigations of famous cases in science ethics. The coursework culminates with the experiential level, an ethics practicum with emphasis on topics of peer review and human/animal experiments – two cornerstones of modern research life.

Multi-Spectral Imaging for the Simultaneous Detection of Stress and Concealed Objects

Role: Principal Investigator
Sponsors: National Institute of Standards
Performance Period: 09/01/2011 – 12/31/2012
Funding: $50,000
Description: The project aims to assess the potential and limitations of multi-spectral imaging for the simultaneous detection of stress indicators and concealed objects. This work addresses the need by law enforcement, criminal justice, security and related agencies to accurately and reliably identify a potential

assailant and to further determine if this potential assailant is concealing a threat or other contraband.

Air Quality Mapping and Related Data Management
Role: Co-Investigator
Sponsors: Houston Endowment
Performance Period: 06/01/2012 – 05/31/2013
Funding: $40,000
Description: The program aims to provide data management and web/iPhone interfaces of animated ozone maps superimposed on physical activity and other applications.

REU Site: Undergraduate Research Experience in Computational Science III
Role: Co-Investigator
Sponsors: National Science Foundation (grant # CNS-1062954)
Performance Period: 03/01/2011 – 02/28/2014
Funding: $350,000
Description: The goal of this project is to introduce undergraduates to research in computational science. This is the third REU awarded to our group.

Remote Human Identification and Intent Determination from Thermal Imagery I
Role: Principal Investigator
Sponsors: Department of Defense
Performance Period: 12/02/2010 – 06/02/2011
Funding: $21,000
Description: This is a pilot program that aims to design imaging technology to identify individuals and determine their intent at a distance.

Spectral Imaging Sensor for Improved Biometric and Human Intent Analysis II
Role: Principal Investigator
Sponsors: Department of Defense
Performance Period: 09/28/2010 – 09/30/2012
Funding: $239,974
Description: This is Phase II of the program that involves the development of spectral imaging techniques and hardware for biometric analysis of human subjects. It aims to producing a system that can determine harmful personnel intent in uncontrolled environments.

EAGER: Improving Human Engagement and Enjoyment in Routine Activities
Role: Principal Investigator
Sponsors: National Science Foundation (grant # IIS-1049004)
Performance Period: 09/01/2010 – 08/31/2011
Funding: $159,068
Description: The program's premise goes against the popular belief that performing many tasks at once harbors danger. Quite the opposite in some cases, multiplexing an interesting task in a background-monitoring task can directly

improve engagement and indirectly performance. This research may revolutionize practice in many critical professions (e.g., security guards) characterized by boredom.

Spectral Imaging Sensor for Improved Biometric and Human Intent Analysis I
Role: Principal Investigator
Sponsors: Department of Defense
Performance Period: 11/13/2009 – 10/31/2010
Funding: $36,000
Description: This is a pilot program that prepares the ground for the development of spectral imaging techniques and hardware for biometric analysis of human subjects. It involves the design of a system that can determine harmful personnel intent in uncontrolled environments.

Advanced Thermal Action Coding System (TACS)
Role: Principal Investigator
Sponsors: Department of Defense
Performance Period: 09/22/2008 – 09/30/2010
Funding: $502,249
Description: The program involves the design and development of methods that perform the traditional polygraph measurements of respiration activity, heart rate, and skin conductance in a contact free manner. These methods will be based on thermal imaging of the face and will be added to the periorbital and forehead channels already in existence.

Instrumentation Grant for Ubiquitous Computing Class
Role: Principal Investigator
Sponsors: Educational Technology - University of Houston
Performance Period: 08/24/2009 – 12/15/2009
Funding: $24,503
Description: The grant further supports the development of an iMac-iPhone lab in support of the Ubiquitous Computing class.

Instrumentation Grant for Ubiquitous Computing Class
Role: Principal Investigator
Sponsors: Educational Technology - University of Houston
Performance Period: 08/18/2008 – 12/15/2008
Funding: $14,158
Description: The grant supports the establishment of an iMac-iPhone lab in support of the Ubiquitous Computing class.

Do Nintendo Surgeons Defy Stress?
Role: Principal Investigator
Sponsors: National Science Foundation (grant # IIS-0812526)
Performance Period: 08/01/2008 – 07/31/2011
Funding: $478,285

Description: The program proposes a novel methodological framework to measure and understand the evolution of stress patterns in humans as well as determine their importance in phenotypes and performance. There is also no better experimental framework to perform a stress study, other than the case of humans engaging in challenging tasks with substantial stakes. The paradigm of surgeon training, which the program will pursue, perfectly fits this description.

SCI: REU Site: Undergraduate Research Experience in Computational Science and Cybersecurity II

Role: Co-Investigator
Sponsors: National Science Foundation (grant # SCI-1550963)
Performance Period: 01/01/2008 – 12/31/2010
Funding: $310,001
Description: The goal of this project is to introduce undergraduates to research in computational science and cyber-security. This is the second REU awarded to our group.

Co-Design and Testing of Stress Quantification Experiments

Role: Principal Investigator
Sponsors: Methodist Hospital
Performance Period: 10/01/2007 – 12/31/2010
Funding: $199,021.18
Description: The project's objective is to understand and quantify stress during surgeon training and link it to performance.

Interacting with Human Physiology II

Role: Principal Investigator
Sponsors: National Science Foundation (grant # IIS-0741581)
Performance Period: 08/01/2007 – 07/31/2008
Funding: $42,909
Description: The project's objective is to identify a contact-free stress measurement method that can provably perform as well as the best contact method (i.e., GSR) in psycho-physiological studies.

ATHEMOS – Advanced Technology Development

Role: Principal Investigator
Sponsors: Department of Defense
Performance Period: 12/15/2006 – 09/21/2008
Funding: $556,073
Description: The goal of this project is to perform research that would improve facial tissue tracking in thermal infrared, develop advanced classification methods, include novel psycho-physiological channels in lie detection, pursue an aggressive program of experimental investigation, and automate the voice – thermal clip cross-indexing.

Thermal Imaging – A Novel Non-Contact Method to Detect Apnea/Hypopnea During Polysomnography

Role: Co-Investigator
Sponsors: National Institutes of Health Clinical and Translational Sciences Award (grant #UL1RR024148)
Performance Period: 01/15/2007 – 01/15/2008
Funding: $50,000
Description: The project's objective was to evaluate the ability of the thermal imaging system:

1) To study respiratory pattern and respiratory rate in volunteers with no prior history of SRBD
2) To detect apnea and hypopnea in patients with obstructive sleep apnea syndrome

The usefulness of the thermal imaging system to detect apnea and hypopnea was compared with that of the thermistor.

Integrated CAI Threat Assessment

Role: Principal Investigator
Sponsors: Department of Defense
Performance Period: 12/15/2006 – 09/30/2007
Funding: $292,702
Description: The goal of this project was to develop a multi-modal physiological sensing platform and test its performance in lie detection experiments.

Efficacy of Prototype Credibility Assessment Technologies

Role: Principal Investigator
Sponsors: Department of Defense
Performance Period: 12/15/2006 – 09/30/2007
Funding: $350,000
Description: The goal of this project was to develop a new Automatic THErmal MOnitoring System (ATHEMOS) and participate in multi-modality lie detection experiments.

Hostile Intent

Role: Principal Investigator
Sponsors: Department of Homeland Security
Performance Period: 10/09/2006 – 10/31/2007
Funding: $135,000
Description: The goal of this project was to research psycho-physiological data produced by the SUNY Buffalo Communication Lab in a large scale deception experiment.

Detection Research and Development Support

Role: Principal Investigator
Sponsors: Department of Homeland Security
Performance Period: 09/26/2005 – 01/01/2007

Funding: $79,828
Description: The goal of this project was to perform collaborative research with the Communication Lab in SUNY Buffalo to understand better the psycho-physiology of high stakes lying and improve the state-of-the-art in deception detection technology.

Experimental Thermal Imaging Systems
Role: Principal Investigator
Sponsors: Department of Homeland Security
Performance Period: 11/15/2005 – 05/15/2006
Funding: $586,683
Description: The goal of this project was to develop two new ATHEMOS systems in support of research and experimentation to be conducted jointly with the Communication Lab in SUNY Buffalo.

Thermal Deception Detection Systems
Role: Principal Investigator
Sponsors: Department of Defense
Performance Period: 15/10/2005 – 14/10/2006
Funding: $955,692
Description: The goal of this project was to pursue improvements on thermal Deception Detection (DD) systems in possession by the Department of Defense Polygraph Institute (DoDPI) through further research. Also, the program aimed to develop three next generation thermal DD systems.

MRI: Acquisition of a Hybrid System and Research Infrastructure for Large-Scale Integration of Biomedical Data
Role: *Co*-Investigator
Sponsors: National Science Foundation (grant # CNS-0521527)
Performance Period: 08/01/2005 – 07/31/2008
Funding: $900,000
Description: The goal of this project is to establish a state-of-the-art research facility, which will serve a large community of users with common interests in the areas of bio-signal analysis and bio-computation.

SCI: REU Site: Undergraduate Research Experience in Computational Science and Cybersecurity
Role: *Co*-Investigator
Sponsors: National Science Foundation (grant # SCI-0453498)
Performance Period: 03/01/2005 – 08/31/2007
Funding: $182,856
Description: The goal of this project was to introduce undergraduates to research in computational science and cyber-security.

Novel Thermal Imaging Systems and Methodologies for Next Generation Polygraphy

Role: Principal Investigator
Sponsors: DOD Polygraph Institute
Performance Period: 11/28/2004 – 08/28/2005
Funding: $493,288
Description: The goal of this project was to procure several off-the-shelf and custom made components to design and implement two experimental Thermal Imaging Systems, as well as the conduct of relevant data collection and analysis for the Department of Defense Polygraph Institute (DoDPI).

Biomedical Imaging

Role: Principal Investigator.
Sponsors: Honeywell International
Performance Period: 11/01/2004 – 12/31/2005
Funding: $50,000
Description: The project aimed to develop the next generation anatomical facial tracker, capable of locking on particular facial areas (e.g., periorbital, forehead, nasal, or major superficial vessels) and following them over time with high accuracy. The sensing modality was thermal imaging. The technology found applications in continuous and contact-free monitoring of a subject's vital signs.

Interacting with Human Physiology

Role: Principal Investigator
Sponsors: National Science Foundation (grant # IIS-0414754)
Performance Period: 08/01/2004 – 07/31/2008
Funding: $640,169
Description: The project aims to add a new dimension in human-computer interaction (HCI), namely, to monitor the physiology of computer users on a continuous basis and take appropriate actions when warranted. The project aspires to use the abundant computing resources at home and the office in combination with novel sensing, algorithmic, and interface methods to enhance the user's experience and at the same time create a new preventive medicine paradigm.

Collaborative Research: Capacity Expansion in Information Assurance

Role: *Co-* Investigator
Sponsors: National Science Foundation (grant # DUE-0313880)
Performance Period: 06/01/03 – 05/31/07
Funding: $201,949
Description: The project sought to expand the capacity of Stony Brook University and University of Houston to produce high-quality professionals in information assurance and computer security that can make a definitive contribution towards the problem of protecting our nation's critical infrastructure.

Thermal Facial Screening

Role: Principal Investigator
Sponsors: TSWG (subcontract # B09390131)
Performance Period: 03/01/2003 – 03/31/2005
Funding: $301,000
Description: The objective of the project was to design, implement, and test a revolutionary Deception Detection prototype machine based on thermal imaging. In this direction, two major problems were addressed: a) automatic face registration and b) blood flow measurement at a distance.

Thermal Imaging Experimentation and Analysis for Deception Detection

Role: Principal Investigator
Sponsors: DARPA (grant # N00014-03-1-0622)
Performance Period: 04/15/2003 – 01/31/2005
Funding: $99,482
Description: The objective of the project was to support thermal imaging experimentation and analysis for Deception Detection.

Honeywell Laboratories Period (January 1997 – August 2002) - **Total: $3,900,000**

Thermal Image Analysis for Biomedical Applications

Role: Principal Investigator
Sponsors: Honeywell Laboratories, Mayo Clinic, and DOD
Performance Period: July 1999 – August 2002
Funding: $700 K
Description: The objective of the project was to develop the algorithmic, software, and hardware elements necessary for remote monitoring of the physiology at the surface of the human body. Dr. Pavlidis was leading a multi-organizational team encompassing the computer vision group at Honeywell Labs, a medical research group from Mayo Clinic, and a group of psychologists from the DOD Polygraph Institute. He had the original idea for the project and wrote a series of successful internal and external proposals to finance it. He invented a method for extracting blood-flow rate information from raw thermal video data. He used this method to perform facial screening and detect deceit. His work in this area led to multiple patents, publications in pre-eminent scientific journals, and unprecedented media coverage.

Face Detection and Recognition in Unconstrained Environments

Role: Principal Investigator
Sponsors: Honeywell Laboratories and DOT
Performance Period: March 1998 – August 2002
Funding: $500 K
Description: The objective of the project was to develop the algorithmic, software, and hardware elements for migrating face recognition technology from access control to surveillance applications. Dr. Pavlidis had the original idea for

the project and he wrote a series of internal and external proposals to finance it. He was the inventor of the Triple Band Imager (TBI), an optical system that splits the scene light three ways: visible, upper near-IR, and lower near-IR beams. The TBI system capitalized upon some unique reflectance properties of the human skin in the respective bands for accurate face location. The system used its own near-IR light source and it was impervious to light and environmental changes.

Detection of Events for Threat Evaluation and Recognition (DETER)

Role: Principal Investigator
Sponsors: Honeywell Laboratories
Performance Period: June 1999 – August 2002
Funding: $700 K
Description: The objective of the project was to develop the algorithmic, software, and hardware elements for detecting and tracking movements of people and vehicles in large open spaces and draw inferences as to the level of threat they may pose. Dr. Pavlidis had the original idea for the project and wrote a series of internal proposals to finance it. The project led to an advanced surveillance product by January 2002. The first grand scale DETER system became operational in 2002 for monitoring automatically movements across the length of a new oil pipeline (900 miles) in Central Asia.

Cooperative Camera Network (CCN)

Role: Principal Co-Investigator (in cooperation with Dr. V. Morellas)
Sponsors: Honeywell Laboratories and Federal Aviation Administration (FAA)
Performance Period: June 1999 – August 2002
Funding: $1.2 M
Description: The objective of the project was to develop the algorithmic, software, and hardware elements for automated monitoring of designated individuals across an entire commercial complex (e.g. an airport). Dr. Pavlidis had the original idea for the project and co-wrote a series of internal and external proposals to finance it. A prototype version of CCN was installed at the Minneapolis International Airport on an experimental basis; it focused towards bolter detection and tracking.

Integration of Computer Vision Research into Academic Curriculum

Role: Industry Advisor
Sponsors: National Science Foundation
Performance Period: January 2001 – August 2003
Description: The objective of the project was to revamp the undergraduate curriculum in Computer Science through the experience gained form close interaction between academic departments and corporate labs. The emphasis was in the integration of computer vision research modules in undergraduate courses to better cater the needs of corporate R&D labs in skilled graduates. Dr. Pavlidis was part of the original team that wrote the proposal and served as member of the advisory board that directed the execution of the project among a dozen computer science departments and corporate labs.

Universal Performance Evaluation Tool

Role: Support Research Engineer
Sponsors: Air Force Research Laboratory (AFRL)
Performance Period: June 1996 – October 1999
Funding: $ 800 K
Description: The objective of the project was to develop semi-automatic ground-truthing and evaluation tools in support of the Moving and Stationary Target Acquisition and Recognition (MSTAR) program of DARPA. Dr. Pavlidis designed and developed semi-automated target delineation tools for SAR imagery. He also designed and developed performance evaluation algorithms for Automatic Target Recognition (ATR) systems. All the algorithms and the associated software are still in use by AFRL and some were incorporated into the programming environment Khoros.

Editorial Contributions

1. **Member of Editorial Board,** *Image and Vision Computing* journal, Elsevier, 2008-2009

2. **Member of Editorial Board,** *Pattern Analysis and Applications* journal, Springer, 2001-2006

3. **Editor**, Edited Book by *Springer-Verlag*, Theme: "Computer vision beyond the visible spectrum," 2004

4. **Editor**, Special Issue of *Image and Vision Computing* journal, Theme: "Computer Vision beyond the Visible Spectrum," vol. 21, July 1, 2003

5. **Editor**, Special Issue of *Machine Vision and Applications* journal, Theme: "Computer Vision beyond the Visible Spectrum," vol. 11, no. 6, 2000

Selected Invited Talks

1. *Driver Performance Under Cognitive, Emotional, Sensorimotor and Mixed Stressors,* Invited Talk, **School of Science and Computer Engineering**, **University of Houston - Clear Lake,** Clear Lake, Texas, March 2016

2. *Deception Detection in the 2000s,* Invited Keynote Talk, **ACM Workshop on Multimodal Deception Detection – WMDD 2015**, Seattle, Washington, November 2015

3. *Unobtrusive and Continuous Monitoring of Physiological Variables with Applications,* Invited Talk, **Nutrition Obesity Research Center**, **University of Alabama at Birmingham,** Birmingham, Alabama, October 2014

4. *Facial Emotion Processing,* Invited Talk, **Society for Affective Sciences,** Bethesda, Maryland, April 2014

5. *Beware of Sympathetic Loping in Surgery and Beyond,* Invited Talk, **Media Labs, MIT,** Cambridge, Massachusetts, November 2013

6. *Beware of Sympathetic Loping in Surgery and Beyond,* Invited Talk, **National Institute of Standards,** Gaithersburg, Maryland, October 2013

7. *Beware of Sympathetic Loping in Surgery and Beyond,* Invited Talk, **Methodist Institute for Technology, Innovation, and Education,** Houston, Texas, September 2013

8. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **College of Engineering, Texas A&M University,** College Station, Texas, September 2013

9. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **Digital Technology Center, University of Minnesota,** Minneapolis, Minnesota, April 2013

10. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **Department of Electrical Engineering, University of California-Riverside,** Riverside, California, April 2013

11. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **Department of Computer and Information Sciences, Rutgers University,** Piscataway, New Jersey, March 2013

12. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **IBM T.J. Watson Research Center**, Yorktown Heights, New York, March 2013

13. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **Department of Computer Science, University of Houston,** Houston, Texas, March 2013

14. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **Centre Interfacultaire en Sciences Affectives, University of Geneva,** Geneva, Switzerland, June 2012

15. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **NSF REU Summer Seminar Series, University of Houston,** Houston, Texas, June 2012

16. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **Department of Computer Science and Engineering, University of North Texas,** Denton, Texas, May 2012

17. *Quantitative Stress Measurement and Procedural Competence,* Plenary Talk, **4th Annual American College of Surgeons Accredited Educational Institutes Postgraduate Course,** Houston, Texas, September 2011

18. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **Department of Biology, University of Houston,** Houston, Texas, August 2011

19. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Plenary Talk, **3rd Annual International Conference on Computational Surgery,** Houston, Texas, January 2011

20. *Fast by Nature – How Stress Patterns Define Human Experience and Performance,* Invited Talk, **Department of Electrical and Computer Engineering, Old Dominion University,** Norfolk, Virginia, December 2010

21. *A Novel Way to Conduct Human Studies and Do Some Good,* Invited Distinguished Talk, **4th IGT-University of Nevada Engineering Symposium,** Reno, Nevada, May 2010

22. *Imaging Stress,* Keynote Talk, **4th International Symposium on Visual Computing,** Las Vegas, Nevada, December 2008

23. *From DNA to Facial Expressions: Detecting Stress Phenotypes and Genotypes,* Invited Talk, **Futures Conferences on Personalized Medicine, The Golf Coast Consortia, A Joint Program of Rice University, Baylor College of Medicine, University of Houston, University of Texas Medical Branch at Galveston, and University of Texas M.D. Anderson Cancer Center,** Houston, Texas, June 2008

24. *Computing Stress,* Invited Talk, **Computer Science Department, Texas A&M University,** College Station, Texas, April 2008

25. *Virtual Thermistor,* Invited Talk, **M.D. Anderson Cancer Center**, Houston, Texas, February 2008

26. *Harvesting the Thermal Cardiac Pulse Signal,* Invited Talk, **PharmaMedDevice**, New York, New York, April 2007

27. *Looking through the Human Face,* Invited Talk, **University of Technology Sydney**, Sydney, Australia, November 2006

28. *Looking through the Human Face,* Invited Talk, **IBM T.J. Watson Research Center**, Yorktown Heights, New York, June 2006

29. *Interacting with Human Physiology,* Invited Talk, **Computer Science Department, Texas A&M University,** College Station, Texas, October 2005

30. *Interacting with Human Physiology,* Invited Talk, **Keck Seminar at Rice University,** Houston, Texas, February 2005

31. *Estimation of Pulse, Blood Flow Rate, and Vessel Location from Thermal Video*, Invited Talk, **Computer Science Department, University of Pennsylvania**, Philadelphia, Pennsylvania, February 2004

32. *Estimation of Blood Flow Rate and Vessel Location from Thermal Video*, Invited Talk, **Chemical Engineering Department**, **University of Houston**, Houston, Texas, December 2003

33. *The Computer as a Guardian Angel*, Invited Talk, **Electrical and Computer Engineering Department**, **Democritus University**, Xanthi, Greece, June 2003

34. *The Computer as a Guardian Angel*, Invited Talk, **Computer Science Department**, **University of Crete**, Heraklion, Greece, June 2003

35. *Monitoring of Facial Blood Flow Through Heat Transfer Modeling and Its Application to Deception Detection,* Invited Talk, **Defense Advanced Research Projects Agency (DARPA)**, Washington D.C., August 2002

36. *Monitoring of Physiological Parameters Through Thermal Video Analysis and Its Applications to Biometrics and Medicine,* Invited Talk, **Houston University**, Houston, Texas, June 2002

37. *Thermal Facial Screening*, Invited Talk, **Oregon Health Sciences University**, Beaverton, Oregon, February, 2002

38. *Thermal Facial Screening*, Invited Talk, **University of Nevada at Reno**, Reno, Nevada, December, 2001

39. *Thermal Facial Screening*, Invited Talk, **Arizona State University**, Tempe, Arizona, November, 2001

40. *Deception Detection,* Invited Talk (jointly with Dr. J. Levine), **Defense Advanced Research Projects Agency (DARPA)**, Washington D.C., October 2001

41. *Detection of Events for Threat Evaluation and Recognition: DETER*, Invited Talk, **Wright State University**, Dayton, Ohio, August 2001

42. *Thermal Facial Screening*, Invited Talk, **Mayo Graduate School of Medicine**, Rochester, Minnesota, August 2001

43. *State-of-the-Art Security Prototypes*, Invited Presentation, **America's Security Expo**, Miami, Florida, July 2001

44. *Video-Based Monitoring and Surveillance: From the Laboratory to the Commercial World,* Invited Talk, **Philips Research Laboratories**, Briarcliff Manor, New York, March 2001

45. *Detecting Tumors, Physiological State, Human Faces, and Activity Patterns*, Invited Talk, Department of Electrical and Computer Engineering, **San Diego State University**, San Diego, California, December 2000

46. *Automatic Detection of Human Anxiety*, Invited Talk, **Defense Advanced Research Projects Agency (DARPA)**, Washington D.C., September 1999

47. *Automatic Detection of Disguised Faces*, Invited Talk, **Defense Advanced Research Projects Agency (DARPA)**, Washington D.C., July 1999

48. *Automatic Detection and Counting of Passengers in the High Occupancy Vehicle (HOV) Lane*, Invited Talk, Department of Computer Science, **Georgetown University**, Washington D.C., March 1999

49. *Modeling of Remotely Sensed Data for Military and Civilian Applications*, Invited Talk, Department of Electrical and Computer Engineering, **San Diego State University**, San Diego, California, January 1998

50. *Honeywell's Capabilities for the Dynamic Database Program*, Invited Talk**, Defense Advanced Research Projects Agency (DARPA)**, Washington D.C., April 1997

51. *Ongoing Research at the Artificial Intelligence, Robotics, and Vision Laboratory of the University of Minnesota*, Invited Talk, Department of Electrical Engineering**, Aristotle University**, Thessaloniki, Greece, July 1995

Research Awards

1. 2014 Faculty Research Award – for contributions in interdisciplinary research, **Computer Science Department, University of Houston**, October 2014

2. Winner of Poster Research Competition (my Ph.D. student Avinash Wesley) – for "Fast by nature – How stress patterns define human experience and performance", **2010 Annual Meeting of The National Center for Human Performance,** Houston, Texas, November 2010

3. Winner of Graduate Research Competition (my Ph.D. student Yuichi Fujiki) – for "iPhone as a physical activity measurement platform", **ACM Conference on Human Factors in Computing Systems (CHI),** Atlanta, Georgia, April 2010

4. Poster Paper Award – for "Tissue tracking in thermo-physiological imagery", **International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI),** London, September 2009

5. Eckhard-Pfeiffer Endowed Professorship – for excellence in scholarship, **Computer Science Department, University of Houston,** October 2006

6. 2004 Faculty Research Award – for contributions in computational biomedicine research, **Computer Science Department, University of Houston**, May 2004

7. 2001 Technical Achievement Award – for contributions in visual surveillance research, **Highest Honorary Distinction in Honeywell Inc.**, December 2001

8. Laboratory Technical Award – for contributions in visual surveillance research, **Honeywell Laboratories**, November 2001

9. Individual Technical Award - for contributions in visual surveillance research, **Honeywell Laboratories**, February 2001

10. Individual Technical Award - for contributions in visual surveillance research, **Honeywell Laboratories**, January 1999

11. Individual Technical Award - for contributions in biometrics research, **Honeywell Laboratories**, December 1999

12. Individual Technical Award - for contributions in face detection research, **Honeywell Laboratories**, February 1999

13. Team Technical Award - for contributions in computer vision research, **Honeywell Laboratories**, August 1997

14. Fulbright Fellowship, **Greece**, August 1991 - June 1992

15. B.S. in Electrical Engineering Summa cum Laude,
    Democritus University of Thrace, Greece, June 1987

16. Honored Three Times by the **Greek Department of Education** with Highest Honors (1979, 1980, and 1981) for scholarly achievements during the High School education

Ph.D. and Postdoctoral Advisees (Placement)

T. Bourlai (University of West Virginia); P. Buddharaju (UH-Clear Lake); M. Dcosta (UH); J. Dowdall (Google), J. Fei (Halliburton); Y. Fujiki, (ChaiONE); P. Lindner (UH); A. Merla (University of Chieti, Italy); D. Shastri (UH-Downtown); N. Sun (Trade Ranger); I. Uyanik (Halliburton); A. Wesley (Halliburton); Y. Zhou (Electa); Z. Zhu (Halliburton).

Departmental Service

1. **UH DOR Scientific Misconduct Committee,** *serves from 2015-2016*

2. **UH NSM College P&T Committee,** *serves from 2016-2018*

3. **UH CS P&T Committee - Chair,** *serves from 2015-2018*

4. **UH Conflict of Interest Committee,** *serves from 2012-*

5. **UH CS Search Committee,** *served from 2013-2016*

6. **UH NSM College P&T Committee,** *served from 2010-2014*

7. **UH CS P&T Committee,** *served from 2010-2013*

8. **UH CS Graduate Studies Committee,** *served from 2009-2010*

9. **UH CS Faculty Search Committee**, *served as chair from 2009-2010*

10. **UH CS P&T Committee,** *served from 2006-2009*

11. **UH CS Faculty Search Committee**, *served from 2004-2006, elected chair in 2004.* During Dr. Pavlidis' tenure the application process went on-line and was streamlined. The result was successful hiring in shorter time.

12. **UH CS Curriculum Committee,** *elected member in 2003 and 2004*. Dr. Pavlidis was the primary author of the revised undergraduate curriculum and Ph.D.

qualification system. The revised undergraduate curriculum brought the Department in par with the latest trends in the best schools around the country. One major change was the introduction of Software Engineering as a core course for undergraduates. The revised Ph.D. qualification system replaced exams with core courses. This is a statistically fairer and more streamlined evaluation system and it has increased Ph.D. student productivity at the learning and research levels. Dr. Pavlidis also proposed the introduction of multi-disciplinary courses as part of the Ph.D. course requirement. The proposal was accepted by the curriculum committee and the Department and is currently in effect. This change was long overdue and reflects the increased emphasis of applications in the computer science discipline.

13. **UH CS Industrial Committee**, elected *member in 2004*. Dr. Pavlidis has established a summer intern program between the Department and several industrial partners (Honeywell, IBM, GE, and Siemens).

Professional Service

Conference Activities

1. **Program Co-Chair,** *11th International Symposium on Visual Computing*, Las Vegas, Nevada, December 14-16, 2015.

2. **Program Committee Member,** *IEEE Workshop on Biometrics*, in conjunction with CVPR 2014, Columbus, Ohio, June 23, 2014.

3. **Program Committee Member,** *IEEE Workshop on Biometrics*, in conjunction with CVPR 2013, Portland, Oregon, June 23, 2013.

4. **Associate Editor**, *2012 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2012)*, Vilamoura, Algarve, Portugal, October 7-12, 2012.

5. **Program Committee Member,** *IEEE Workshop on Biometrics*, in conjunction with CVPR 2012, Providence, Rhode Island, June 17, 2012.

6. **Associate Editor**, *2011 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2011)*, San Francisco, California, September 25-30, 2011.

7. **Program Committee Member,** *IEEE Workshop on Object Tracking and Classification beyond the Visible Spectrum*, in conjunction with CVPR 2011, Colorado Spring, Colorado, June 25, 2011.

8. **Program Committee Member,** *IEEE Workshop on Biometrics*, in conjunction with CVPR 2011, Colorado Springs, Colorado, June 25, 2011.

9. **Industrial Chair**, *6th International Conference on Functional Imaging and Modeling of the Heart*, New York, New York, May 25-27, 2011.

10. **Industrial Chair**, *11th European Conference on Computer Vision*, Heraklion, Crete, Greece, September 5-11, 2010.

11. **Program Committee Member,** *IEEE Computer Society and IEEE Biometrics Council Workshop on Biometrics*, in conjunction with CVPR 2010, San Francisco, California, June 18, 2010.

12. **Honorary Chair**, *IEEE International Conference on Advanced Video and Signal Based Surveillance*, Genoa, Italy, September 2-4, 2009.

13. **Program Committee Member,** *IEEE Workshop on Object Tracking and Classification beyond the Visible Spectrum*, in conjunction with CVPR 2009, Miami Beach, Florida, June 20, 2009.

14. **Program Chair**, *IEEE International Conference on Advanced Video and Signal Based Surveillance*, Santa Fe, New Mexico, September 1-3, 2008.

15. **Program Committee Member,** *IEEE Workshop on Biometrics*, in conjunction with CVPR 2008, Anchorage, Alaska, June 28, 2008.

16. **Program Committee Member,** *IEEE Workshop on Object Tracking and Classification beyond the Visible Spectrum*, in conjunction with CVPR 2008, Anchorage, Alaska, June 27, 2008.

17. **Workshop Chair,** *IEEE Workshop on Physiological Monitoring 24/7*, in conjunction with EMBC 2007, Lyon, France, August 22, 2007.

18. **Workshop Chair,** *IEEE Workshop on Object Tracking and Classification beyond the Visible Spectrum*, in conjunction with CVPR 2007, Minneapolis, Minnesota, June 22, 2007.

19. **Industrial Chair**, *11th IEEE International Conference on Computer Vision*, Rio de Janeiro, Brazil, October 14-21, 2007.

20. **Special Sessions Chair**, *2007 IEEE Conference on Advanced Video and Signal Based Surveillance*, London, United Kingdom, September 5-7, 2007.

21. **Program Chair**, *2006 IEEE Conference on Advanced Video and Signal Based Surveillance*, Sydney, Australia, November 22-24, 2006.

22. **Program Committee Member,** *2nd International Symposium on Visual Computing*, Lake Tahoe, Nevada, November 6-8, 2006.

23. **Program Committee Member,** *9th European Conference on Computer Vision*, Graz, Austria, May 7-13, 2006.

24. **Program Committee Member,** *IEEE Workshop on Object Tracking and Classification beyond the Visible Spectrum*, in conjunction with CVPR 2006, New York, New York, June 22, 2006.

25. **Program Committee Member,** *Video Proceedings of CVPR,* New York, New York, June 17-22, 2006.

26. **Program Committee Member,** *5th IEEE Symposium on Bioinformatics and Bioengineering*, Minneapolis, Minnesota, October 19-21, 2005.

27. **Program Committee Member,** *1st International Symposium on Visual Computing*, Lake Tahoe, Nevada, December 5-7, 2005.

28. **Honorary Chair,** *IEEE International Conference on Advanced Video and Signal based Surveillance*, Lake Como, Italy, September 15-16, 2005.

29. **Program Committee Member,** *Video Proceedings of CVPR,* San Diego, California, June 20-25, 2005.

30. **Program Committee Member,** *IEEE Workshop on Object Tracking and Classification beyond the Visible Spectrum*, in conjunction with CVPR 2005, San Diego, California, June 20, 2005.

31. **Workshop Chair,** *IEEE Workshop on Medical Infrared Imaging*, San Francisco, California, September 1 2004.

32. **Program Committee Member,** *IEEE Computer Society Conference on Computer Vision and Pattern Recognition*, San Diego, California, June 20-25, 2005

33. **Program Committee Member,** *IEEE Workshop on Object Tracking and Classification beyond the Visible Spectrum*, in conjunction with CVPR 2004, Washington D.C., July 02, 2004.

34. **Chair**, *IEEE International Conference on Advanced Video and Signal Based Surveillance*, Miami, Florida, July 21-22, 2003.

35. **Program Committee Member,** *ACM Workshop on Biometrics: Methods and Applications*, Berkeley, California, November 8, 2003.

36. **Workshop Chair,** *IEEE Workshop on Computer Vision Beyond the Visible Spectrum: Methods and Applications*, in conjunction with CVPR 2001, Kauai, Hawaii, December 14, 2001.

37. **Program Committee Member,** *IEEE Workshop on Combined Research-Curriculum Development in Computer Vision*, in conjunction with CVPR 2001, Kauai, Hawaii, December 10, 2001.

38. **Chair, Biomedical Engineering Session 2: Bioimaging,** *2nd IEEE International Symposium on Bioinformatics and Bioengineering*, Washington D.C., November 5, 2001.

39. **Program Chair**, *2nd IEEE International Symposium on Bioinformatics and Bioengineering*, Washington D.C., November 4-5, 2001.

40. **Program Committee Member**, *IEEE Workshop on Applications of Computer Vision 2000*, Palm Springs, California, December 4-6, 2000.

41. **Chair, Biomedical Engineering Session 4: Bioimaging II,** *1st IEEE International Symposium on Bioinformatics and Bioengineering*, Washington D.C., November 9, 2000.

42. **Program Committee Member**, *1st IEEE International Symposium on Bioinformatics and Bioengineering*, Washington D.C., November 8-10, 2000.

43. **Workshop Chair**, *IEEE Workshop on Computer Vision Beyond the Visible Spectrum: Methods and Applications*, in conjunction with CVPR 2000, Hilton Head Island, South Carolina, June 16, 2000.

44. **Workshop Chair**, *IEEE Workshop on Computer Vision Beyond the Visible Spectrum: Methods and Applications*, in conjunction with CVPR 1999, Fort Collins, Colorado, June 22, 1999.

Selected Panel Participations

1. NIH/NCI multiple review panels, 2015

2. NIH/NCI multiple review panels, 2014

3. NIH/NCI multiple review panels, 2013

4. NSF/HCC review panel, 2012

5. NSF/HCC review panel, 2011

6. NIH/NCI review panel, 2011

7. NSF/CCF review panel, 2010

8. NSF/Career review panel, 2008

9. NSF/HCC review panel, 2008

10. NSF/IIS review panel, 2004

11. NSF/SPS review panel, 2003

Reviewer Status (Selected Journals)

1. Computer Vision and Image Understanding
2. IEEE Robotics and Automation Magazine
3. IEEE Transactions on Affective Computing
4. IEEE Transactions on Biomedical Engineering
5. IEEE Transactions on Fuzzy Systems
6. IEEE Transactions on Pattern Analysis and Machine Intelligence
7. IEEE Transactions on Signal Processing
8. IEEE Transactions on Intelligent Transportation Systems
9. IEEE Transactions on Vehicular Technology
10. Machine Vision and Applications
11. Medical Image Analysis
12. Pattern Recognition Letters
13. Physiology and Behavior
14. PLOS One

Professional Memberships

1. Member of ACM (Association for Computing Machinery)
2. Senior Member of IEEE (Institute of Electrical and Electronics Engineers)
    - IEEE Computer Society
    - IEEE Engineering in Medicine and Biology Society
3. Member of the Technical Chamber of Greece

Career Profile

Research Career Profile

Eckhard-Pfeiffer Professor, Univ. of Houston, Computer Science Dept., Oct 2006 - Now

In recognition of his research and teaching excellence Dr. Pavlidis was awarded this prestigious endowed chair almost simultaneously with his promotion to full professor.

Professor, Univ. of Houston, Computer Science Dept., Sept 2006

Director and Founder of the Computational Physiology Lab. The lab has established itself as a world leader in computational physiology with a sustained annual rate of funding around $1 M.

Associate Professor, Univ. of Houston, Computer Science Dept., Sept. 2002 – Aug. 2006

Director and Founder of the Computational Physiology Lab. The lab's research is dedicated to computational biomedicine and biometrics with special emphasis on contact-free computation of vital signs and stress levels as well as the development of health games. The lab produced multiple research prototypes that are in experimental practice in various medical and psychology labs. One of these prototypes was showcased in the Nextfest exposition of futuristic technologies in San Francisco (May 14-16, 2004).

Sr Principal Research Scientist, Honeywell Laboratories, May 2001 – August 2002

Director of the Computer Vision Laboratory. Leader of a group of seven scientists, engineers, and technicians. Responsible for the management, budget allocation, and road-mapping of the group. Chief technology designer for the advanced imaging and multimedia products and services of the Honeywell Corporation. Featured in a full honorary page in the 2001 Honeywell's Annual Report in recognition of professional excellence.

Principal Research Scientist, Honeywell Laboratories, May 1999 – April 2001

Principal Investigator in numerous Government and corporate technical projects. Responsible for both the proposal and technical execution phases of each project. Initiator of a long-term cooperative research and development project between Honeywell Labs and Mayo Clinic. Recipient of the 2001 Technical Achievement Award (highest corporate distinction) for inventing and bringing into production an automated surveillance system in record time.

Senior Research Scientist, Honeywell Laboratories, July 1997 - April 1999

Technical leader in numerous Government and corporate R&D projects. Inventor of several algorithms that were lauded by peer reviewers in engineering journals and led to successful products and patents.

Research Associate, Honeywell Laboratories, June 1996 - June 1997

Support R&D engineer in the U.S. Air Force project UPET. Designer of an algorithm for target delineation in SAR imagery that was adopted for regular use

by the Air Force Research Laboratory. Developer of the associated software that became part of the commercial programming environment Khoros.

Research Assistant, University of Minnesota, September 1994 - December 1996
Co-designer of the Minnesota Robotic Visual Test-bed, a research project funded by the U.S. Department of Energy. Recipient of the prestigious Graduate School grant for doctoral research. The doctoral research was focused on handwriting recognition for multi-media devices.

Teaching Career Profile

Eckhard-Pfeiffer Professor: University of Houston, Computer Science Dept.
Advanced Statistical Methods, Spring 2016
Ubiquitous Computing (iPhone), Fall 2015
Advanced Statistical Methods, Spring 2015
Ubiquitous Computing (iPhone), Fall 2014
Advanced Science Ethics, Spring 2014
Ubiquitous Computing (iPhone), Fall 2013
Advanced Science Ethics, Spring 2013
Computational Physiology, Spring 2013
Ubiquitous Computing (iPhone), Fall 2012
Advanced Science Ethics, Spring 2012
Computational Physiology, Spring 2012
Ubiquitous Computing (iPhone), Fall 2011
Computational Physiology, Spring 2011
Ubiquitous Computing (iPhone), Fall 2010
Computational Physiology, Spring 2010
Ubiquitous Computing (iPhone), Fall 2009
Computational Physiology, Spring 2009
Ubiquitous Computing (iPhone), Fall 2008
Computational Physiology, Spring 2008
Ubiquitous Computing, Fall 2007
Computational Physiology, Spring 2007
Ubiquitous Computing, new course established by Prof. Pavlidis in Fall 2006

Associate Professor: University of Houston, Computer Science Dept.
Computational Physiology, new course established by Prof. Pavlidis in Spr. 2006
Multimedia Programming, Fall 2005
Infrared Imaging, Spring 2005
Software Engineering, Fall 2004
Information Assurance, new course established by Prof. Pavlidis in Spr. 2004
Multimedia Programming, new course established by Prof. Pavlidis in Spr. 2003
Infrared Imaging, new course established by Prof. Pavlidis in Spr. 2003

Teaching Assistant: University of Minnesota, Computer Science Dept.
Algorithms and Data Structures I, CS-3321, Spring 1994
Introduction to Object-Oriented Programming Using C++, CS-5113,

Winter 1994
Computer Vision, CS-5561, Fall 1993
*The Structure of Computer Program*ming, CS-3316, Fall 1993
Algorithms and Data Structures II, CS-3322, Spring 1993
Algorithms and Data Structures II, CS-3322, Winter 1993
Computer Vision, CS-5561, Fall 1992

Seminar Lecturer: Technical Chamber of Greece, Komotini, Greece
Continuing Education for Young Engineers, Seminar Series, Fall 1990

Computer Skills

Operating Systems
UNIX, iOS, Windows

Programming Languages and Environments
Objective C, C#, Mathematica, Matlab, R