CHARLES E. THORPE

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CURRENT POSITION

Professor of Computer Science, Clarkson University

PERSONAL DATA

US Citizen. Security clearance held by National Academies.
Foreign languages: French and Lingala (African trade language)

EDUCATION

PhD in Computer Science, September 1984. Carnegie Mellon University, Pittsburgh, PA. Thesis title, *Vision and Navigation for a Mobile Robot*. Advisor, Dr. Raj Reddy.

Bachelor of Arts *magna cum laude*, in Natural Science, North Park College, Chicago, IL

PROFESSIONAL EXPERIENCE

Clarkson University

Professor of Computer Science, 2012 – current.

Previous service as **Dean, School of Arts and Sciences**; and as **Senior Vice President and Provost.**

Office of Science and Technology Policy, Executive Office of the President

2011 – 2012: **Assistant Director for Advanced Manufacturing and Robotics, Office of Science and Technology Policy, Executive Office of the President.** Carnegie Mellon faculty on loan to the White House. Helping coordinate policy and budget across the administration, helping set policies for future initiatives including NSF, DOD, NIH, Department of Transportation, NASA, and Department of Agriculture.

Carnegie Mellon University

2004 – 2010: **Dean and CEO, Carnegie Mellon University in Qatar.** First Dean of the branch campus in Doha, Qatar, offering Carnegie Mellon undergraduate degrees in Computer Science, Business Administration and Information Systems.

2000 – 2004 **Director, The Robotics Institute**. Department head overseeing approximately 40 FTE faculty, 100 PhD students, $40 M / year sponsored research budget.

1984 – 2012: Faculty in the Robotics Institute, ending as **Tenured Full Professor of Robotics**. Research in vision, navigation, and architectures for mobile robots. Leader of the Navlab group, building outdoor autonomous vehicles.

Westinghouse Research and Development Center

Part time September 1981 to December 1985; full time Summer 1982. Developed programs for Autonomous Underwater Vehicle simulation and navigation, and for interpretation of side-scan sonar data.

North Park College

Summer 1979 and Summer 1980. Developed and maintained new general ledger and accounting programs for the College Business Office, using RPG and FORTRAN. Taught *Introduction to Programming*. North Park's last plug board "programmer", and first time-sharing programmer.

Institut Mbenga

1976 to 1977 academic year: High school teacher in Zaire, Africa. Taught upper level Mathematics, Physics, English and Physical Education. All instruction in French.

UNIVERSITY ACTIVITIES

PhD Dissertations Supervised:

Justin Carlson, “Mapping Large, Urban Environments with GPS-Aided SLAM”, August 2010
David Duke, “Intelligent Diabetes Assistant: A Telemedicine System for Modeling and Managing Blood Glucose”, January 2010
Chieh-Chih (Bob) Wang, “Simultaneous Localization, Mapping, and Moving Object Tracking,” May 2004.
J. Ryan Miller. “A 3D Color Terrain Modeling System for Small Autonomous Helicopters,” January 2002.
Liang Zhao. “Dressed Human Modeling, Detection, and Parts Localization”, summer 2001.
Frank Dellaert. “Monte Carlo EM for Data-Association and its Applications in Computer Vision”, summer 2001.
Terrence Fong. “Collaborative Control: A Robot-Centric Model for Vehicle Teleoperation,” November 2001.
Parag Batavia, “Driver-Adaptive Lane Departure Warning Systems”, September 1999.
John Hancock, “Laser Intensity-Based Obstacle Detection and Tracking”, February 1999.
Todd Williamson, “A High-Performance Stereo Vision System for Obstacle Detection”, October 1998
Rahul Sukthankar, "Situation Awareness for Driving in Traffic", January 1997.
Julio Rosenblatt, "DAMN: A Distributed Architecture for Mobile Navigation", January 1997.
Dirk Langer, "An Integrated MMW Radar System for Outdoor Navigation", January 1997.
Jennifer Kay, "Remote Driving with Limited Image Data", December 1996.
Jay Gowdy, "Emergent Architectures: A Case Study of Outdoor Mobile Robots", expected 1999.
Todd Jochem, "Using Virtual Active Vision Tools to Improve Autonomous Driving Tasks", January 1996.

David Wettergreen, "Gait Generation for Statically-Stable Walking Robots", December 1995.
Karl Kluge, "YARF: A System for Adaptive Navigation of Structured City Roads", February 1993.
Jill Crisman, "Color Vision for the Detection of Unstructured Roads and Intersections", May 1990.

PhD Dissertation Committees:

Gurpreet Kaur, “Perceptions on Human-Robot Collaboration at Workplaces”, expected summer 2024.
Richard Turner, “Visual Intelligence for Micro Air Vehicles”, expected summer 2024.
Zhiliu Yang, “Learning Geometry and Semantics via Deep Nets towards Global Localization and Mapping”, Clarkson University, July 2021
Nasim Daeimi, “Understanding the Rolling Dynamics of Golf Ball with Asymmetric Mass”, Clarkson University, July 2017
Brenna Argall “Learning Mobile Robot Motion Control from Demonstration and Corrective Feedback”, Carnegie Mellon, March 2009
John J. Sprouse
David Conner, Integrating Planning and Control for Constrained Dynamical Systems, December 2007
Raphael Labayrade, “Détection Générique, Robuste et Rapide d’obstacles Routiers par Stéréovision Embarquée”, January 2004.
Peter Staritz, “Forced Guided Assembly Under Bias”, May 2003.
Gwenaelle Toulminet, "Extraction des contours 3D des obstacles par stereovision pour l’aide à la conduite automobile", Institut National Des Sciences Appliquees De Rouen, December 2002
Omead Amidi, "An Autonomous Vision-Guided Helicopter", summer 1996.
Heung-Yeung Shum, "An Integral Approach to Object Modeling", summer 1996.
Gareth Funka-Lea, "A Proposal Concerning the Analysis of Shadows in Images by an Active Observer", University of Pennsylvania, October 1994
Dean Pomerleau, "Neural Network Perception for Mobile Robot Guidance", February 1992
Alexander Zelinsky, "Environment Exploration and Path Planning Algorithms for Mobile Robot Navigation using Sonar", University of Wollangong, August 1991
John Bares, "Configuration of Autonomous Walkers for Extreme Terrain", May 1991
Ming Tan, "Cost-Sensitive Robot Learning", April 1991
David Manko, "A General Model of Legged Locomotion on Natural Terrain", April 1990
Andrew Lee, "Optical Processing Techniques for Satellite Pose Determination", December 1989.
Anthony Stentz, "The NAVLAB System for Mobile Robot Navigation", October 1989.
Jeff Richards, "Real-Time Optical Hough Transform and Morphological Inspection Technique", Aug 1989.
Dai Feng, "Satisficing Feedback Strategies for Local Navigation of Autonomous Mobile Robots", May 1989
Suzanne Liebowitz, "Optical Multisensor Processing for Object Recognition", March 1989
Wei-Min Shen, "Unsupervised Learning of Novel Features and Tools from Environments", 1989.

Nigel Foster, "Attributed Image Matching Using a Minimum Representation Size Criterion", December 1987.
James Christ, "Shape Estimation and Object Recognition Using Spatial Probability Distributions", April 1987.

Committees and organizations:

Faculty Advisor, Google Student Developer Club, Fall 2022
Faculty Advisor, VEX Robotics Club, 2021 - current
Provosts Committee, Associated Colleges of the St Lawrence Valley, member 2012-2017, Chair 2016-2017
Board of Trustees, Habib University (Karachi, Pakistan) 2010 - present
Steering Committee for the Community College of Qatar 2009 - 2010
Qatar National Research Fund Advisory Committee 2006 – 2010
Academic Bridge Program Governing Board 2006 - 2009
Qatar Campus Joint Advisory Board, 2004 – 2010
School of Computer Science Council, 1999 - 2004
School of Computer Science Dean Search Committee, co-chair, 1998-1999; Member 2003-2004
Governance of SCS Committee, 1998 to 2000
Robotics Institute Master's Program Committee, chair, 1998-2000
School of Computer Science Self-Assessment Committee, chair, 1998
CMRI Head Search Committee, 1997
University Student Disciplinary Committee, 1994 - 1996
Institute Review Committee, chair, 1993 - 1994, member, 1994 - 1996
Robotics Institute Faculty Hiring Committee, 1993
Robotics Institute Strategic Planning Committee, 1991
Robotics Institute 10th Anniversary Symposium Committee, 1989
Robotics PhD Program Admissions Committee Chairman, 1989
Faculty Senate, 1987 to 1989
Student Affairs Council, 1987 to 1988
Faculty Affairs Council, 1988 to 1989
University Parking Committee, 1987 to 1989

PROFESSIONAL ACTIVITIES

Journals:

Guest editor for *Autonomous Robots*, Volume 11, Number 1, July 2001
Guest editor for *IEEE Transactions on Intelligent Transportation Systems*, September 2000
Founding member of editorial board of *Autonomous Robots*, 1993 to present
Technical editor for *IEEE Transactions on Robotics and Automation*, 1991 to 1994
Founding member of editorial board of *International Journal of Computer Vision*, 1987 - 1993

Scientific Committees:

NRC Panel on Assessment of Military Information Sciences at the Army Research Laboratory, chair of study on Military Information Sciences, 2023 - present
IEEE R&D Policy Committee, 2014 – present; chair 2021 – present.
Qatar America Institute for Culture, board member, 2021 – present.

Board of Visitors, University of Pittsburgh School of Computing and Information, 2019 – present; currently Vice Chair
NRC TRB Committee *Coast Guard Maritime Domain Awareness*, 2019 – 2020.
NRC workshop, *Multi-Domain Autonomous Systems for U.S. Naval Forces.* March 2018. Co-chair.
ASME Robotics Public Policy Task Force, member 2017 – present, co-chair. 2017 – 2020
NRC Study, *Mainstreaming UUVs into Future U.S. Naval Operations*, 2015. Chapter lead.
NRC Study, *Mechanical Science and Engineering at the Army Research Laboratory*, 2015 – current
Comite d'Orientation Scientifique du LabEx IMobS3, Chair of Review Committee, Clermont Ferrand France, June 2015
NRC Study, *Review of Specialized Degree-Granting Graduate Programs of the Department of Defense in STEM and Management*, 2014
Scientific Board of Robotics Foundry, 2003 - 2004
Board of Pittsburgh Robotics Initiative, 2002 - 2003
Scientific Advisory committee to Swiss national program "Computer Aided and Image Guided Medical Interventions", 2002 - 2013
Naval Studies Board study on Autonomous Vehicles, 2002 – 2003
Member, DARPA Defense Science Research Council, 1998 - 2002
Member, Society of Automotive Engineers, Intelligent Transportation Systems Program Office, 1997 to 98
Review committee for IRIS, Canadian consortium for University Research, 1995 to 1997
Review committee for Idaho National Engineering Laboratory, 1994.
Comite Scientifique (Scientific Advisory Committee) for the Centre de Recherche Informatique de Montreal, 1993 to 1997

Conferences and Workshops:

Conferences Committee of the IEEE Intelligent Transportation Systems Council
Program Committee of IEEE ITSC, Oakland, California, August 2001
Program Committee of FSR2001 Conference, Finland, June 2001
Program Committee of International Symposium on Robotics Research, Snowbird Utah, Oct 99
Program Committee of 9th International Conference on Advanced Robotics (ICAR), Tokyo, Oct 99
US Program Chair of ITSC 99, Intelligent Transportation Systems Conference, Tokyo, Oct 99
Program Committee of 13th International Conference on Pattern Recognition, Vienna, 1996
Program Committee of IFAC Workshop on Intelligent Components for Autonomous and Semi-Autonomous Vehicles, 1995
Program Committee of International Conference on Advanced Robotics 1995
Program Committee of IEEE International Conference on Robotics and Automation 1995
Program Committee of IROS-95 Workshop on Vision for Robots
Program Committee of IAS-4.
Program Committee of IROS-94
Program Committee of NCAI-94

Co-chair of International Conference on Intelligent Autonomous Systems (IAS-3), Pittsburgh, February 1993
US organizer of joint US / French Workshop on Experimental Underwater Robots, Toulon, France, May 1992
Program Committee of IEEE Workshop on Applications of Computer Vision, Palm Springs, November 1992
Program Committee of 3rd conference on Artificial Intelligence, Simulation and Planning in High Autonomy Systems (AIS), Perth, Western Australia, July 1992
Member of 1991 DARPA ISAT summer study on Autonomous Agents
Program committee of 1991 National Conference on Artificial Intelligence
Organizing committee of IROS 89, Tsukuba, Japan, 1989.

Consulting:

Expert Witness, Kirkland & Ellis, image processing for intelligent vehicles, 2017 - present
Consultant to Robotics Foundry, 2003 - 2004
Consultant to National Center for Defense Robotics, 2002 to 2003
Co-founder and consultant to K2T Inc., 1991 to 1998
Consultant to RedZone Robotics, 1990 to 1991
Consultant to Mitsubishi Heavy Industries America, Inc., 1988
Consultant to Boeing Computer Services, 1986

Professional Societies:

Fellow of the Institute of Electrical and Electronic Engineers (IEEE), 2006
Fellow of American Association for Artificial Intelligence (AAAI), 1996
IEEE Robotics Society, Senior Member of IEEE as of May 1993

PUBLICATIONS

Books

1. Intelligent Unmanned Ground Vehicles: Autonomous Navigation Research at Carnegie Mellon. M. Hebert, C. Thorpe, and A Stentz, editors. Kluwer Academic Publishers, 1997.
2. Guest Editor, Robotics and Autonomous Systems, Vol 11, Nos 3-4, December
3. Special Issue: Intelligent Autonomous Systems - IAS-3.
4. Proceedings of the Third International Conference on Intelligent Autonomous Systems (IAS-3). F. C. A. Groen, S. Hirose, and C. Thorpe, editors. IOS Press, 1993.
5. Vision and Navigation: the Carnegie Mellon Navlab. C. Thorpe, editor. Published by Kluwer Academic Publishers, 1990.

Chapters in Books

1. Vehicle-Based Technologies. C. Thorpe. In Intelligent Transportation Primer, Institute of Transportation Engineers ed. 2000.
2. The New Generation System for the CMU Navlab. C. Thorpe, M. Hebert, T. Kanade, and S. Shafer. In Vision-Based Vehicle Guidance, Ichiro Masaki ed., Springer-Verlag, 1992. A different version of this paper appears as the journal paper, in two parts, "Towards Autonomous Driving: The CMU Navlab" (see above).
3. Robotic Vehicles. C. Thorpe. In Encyclopedia of Physical Science and Technology, 1987. Revised version in second edition, 1992.

4. Vision and Navigation for Carnegie Mellon Navlab. C. Thorpe, M. Hebert, T. Kanade, and S. Shafer. Annual Review of Computer Science, J. Traub, et. al, ed., Annual Reviews Inc., CA, Vol. 2, 1987, pp. 521-556.
5. See also journal articles "Mobile Robots" and "Vision and Navigation for the CMU Navlab" below.

Refereed Journal Papers – Published

1. Simultaneous Localization, Mapping and Moving Object Tracking. C. Wang, C. Thorpe, M. Hebert, S. Thrun and H. Durrant-Whyte. *The International Journal of Robotics Research*, Vol. 26, No. 6, June 2007.
2. Robotics in Early Undergraduate Education. J. Carlson, D. Duke and C. Thorpe. *AAAI Spring Symposium Robotics in Education Proceedings.* March 2007
3. R. Aufrere, J. Gowdy, C. Mertz, C. Thorpe, C. Wang, and T. Yata. Perception for collision avoidance and autonomous driving. *Mechatronics*, Vol. 13, No. 10, December, 2003, pp. 1149-1161.
4. Sensor-Friendly Vehicle and Roadway Cooperative Safety Systems. Benefits Estimation. J. A. Misener, C. Thorpe, R. Ferlis, R. Hearne, M. Siegel and J. Perkowski. Transportation Research Record 1746. Paper No. 01-2297.
5. Advanced interfaces for vehicle teleoperation: collaborative control, sensor fusion displays, and remote driving tools. T. Fong, C. Thorpe, C. Baur. Autonomous Robots, Vol. 11(1), July 2001.
6. Vehicle teleoperation interfaces. T. Fong and C. Thorpe. Autonomous Robots, Vol. 11(1), July 2001.
7. Stereo- and neural Network-Based Pedestrian Detection. L. Zhao and C. Thorpe. IEEE Transactions on Intelligent Transportation Systems, Vol. 1, No. 3, pp. 148-154, September 2000.
8. Enhancing Driver-Assist Sensors: Background And Concepts For Sensor-Friendly Vehicles And Roadways. J. Misener, C. Thorpe, R. Hearne, L. Johnson and A. Segal. 1999.
9. Tactical-level Simulation for Intelligent Transportation Systems. R. Sukthankar, J. Hancock and C. Thorpe. Journal on Mathematical and Computer Modeling, Special Issue on ITS, Vol. 27, No. 9-11, 1998, pp. 228-242.
10. Functional Sensor Modeling for Automated Highway System Simulations. C. Unsal, R. Sukthankar and C. Thorpe. SPIE on Intelligent Systems & Advanced Manufacturing, Vol. 3207, October 1997.
11. Range Sensor based Outdoor Vehicle Navigation. D. Langer and C. Thorpe. Autonomous Robots, 1995, Vol. 2, No. 2, Kluwer Academic Publishers.
12. The YARF System for Vision-Based Road Following. K. Kluge and C. Thorpe. Mathematical and Computer Modelling 22(4-7):213-233, August-October 1995.
13. Exploring Mount Erebus by Walking Robot. D. Wettergreen, C. Thorpe, and W. Whittaker. In Robotics and Autonomous Systems, Vol 11, Nos 3-4, December 1993. Special Issue: Intelligent Autonomous Systems - IAS-3. Also in Proceedings of IAS-3, Pittsburgh, 1993.
14. SCARF: A Color Vision System that Tracks Roads and Intersections. J. Crisman and C. Thorpe. IEEE Trans. on Robotics and Automation, Vol 9 # 1, Feb 1993.
15. Toward Autonomous Driving: The CMU Navlab. Part I: Perception. C. Thorpe, M. Hebert, T. Kanade, and S. Shafer. IEEE Expert, V 6 # 4 August 1991.
16. Toward Autonomous Driving: The CMU Navlab. Part II: System and Architecture. C. Thorpe, M. Hebert, T. Kanade, and S. Shafer. IEEE Expert, V 6 # 4 August 1991.

17. Vision and navigation for the Carnegie-Mellon Navlab. C. Thorpe, M. Hebert, T. Kanade, and S. Shafer. In IEEE PAMI, V. 10 # 3, 1988. Other versions appeared in "High Precision Navigation" (Springer-Verlag, 1989) and in "Annual Reviews of Computer Science", Volume 2, 1987.

Journal Papers - Invited

1. In Education City. C. Thorpe. eJournal USA, Sharing Science: Global Partnerships. Global Issues, US Department of State/Bureau of International Information Programs, October 2006.
2. Mobile Robots. C. Thorpe. In International Journal of Pattern Recognition and Artificial Intelligence, Vol 5 #3, August 1991. Also in Encyclopedia of Artificial Intelligence, Second edition.
3. Outdoor visual navigation for autonomous robots. C. Thorpe. In Robotics and Autonomous Systems 7 (1991). An earlier version of this paper appeared in Proceedings of IAS-2.
4. Combining artificial neural networks and symbolic processing for autonomous robot guidance. D. Pomerleau, J. Gowdy and C. Thorpe. Engineering Applications of Artificial Intelligence, V 4, # 4, 1991.

Refereed Conference / Workshop Papers

1. F Dellaert, J Carlson, V Ila, K Ni, and C Thorpe, "Subgraph-preconditioned Conjugate Gradients for Large Scale SLAM", *IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS), 2010
2. D. Duke, C. Thorpe, and M. Mahmoud. "Intelligent Diabetes Assistant: Using Telemedicine to Assist Diabetes Management" *International Conference on Innovations in Information Technology*, November 2007.
3. J. D. Carlson, C. Thorpe and D. Duke. "Robust Real-Time Local Laser Scanner Registration with Uncertainty Estimation" *International Conference on Field and Service Robotics*, July 2007
4. C. Mertz, D. Duggins, J. Gowdy, J. Kozar, R. MacLachlan, A.M. Steinfeld, A. Suppe, C. Thorpe and C. Wang. "Collision Warning and Sensor Data Processing in Urban Areas" *Proceedings of the 5th international conference on ITS telecommunications.* June 2005. pp. 73-78.
5. C. Wang and C. Thorpe. "A Hierarchical Object Based Reepresentation for Simultaneous Localization and Mapping." *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. September 2004.
6. A.M. Steinfeld, D. Duggins, J. Gowdy, J. Kozar, R. MacLachlan, C. Mertz, A. Suppe, C. Thorpe, and C. Wang. "Development of the Side Component of the Transit Integrated Collision Warning System" *IEEE Conference on Intelligent Transportation Systems (ITSC)*, 2004, pp. 343-348.
7. C. Wang and C. Thorpe. "A Hierarchical Object Based Representation for Simultaneous Localization and Mapping." *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, September 2004.
8. C. Thorpe, J.D. Carlson, D. Duggins, J. Gowdy, R. MacLachlan, C. Mertz, A. Suppe, and C. Wang, "Safe Robot Driving in Cluttered Environments" *Proceedings of the 11th International Symposium of Robotics Research*, October, 2003.
9. T.W. Fong, C. Thorpe, and B. Glass, "PdaDriver: A Handheld System for Remote Driving" IEEE International Conference on Advanced Robotics 2003, IEEE, July, 2003.

10. C. Wang, C. Thorpe, and A. Suppe, "Ladar-Based Detection and Tracking of Moving Objects from a Ground Vehicle at High Speeds" *IEEE Intelligent Vehicles Symposium* (IV2003), June, 2003.
11. Romuald Aufrère, Christoph Mertz, Chuck Thorpe, "Multiple Sensor Fusion for Detecting Location of Curbs, Walls, and Barriers" in *Proceedings of the IEEE Intelligent Vehicles Symposium,* Columbus, Ohio, June 9-11, 2003.
12. Chieh-Chih Wang and Charles Thorpe, "Detection and Tracking of Moving Pedestrians and Vehicles from a Ground Vehicle at High Speeds" in *Proceedings of the IEEE Intelligent Vehicles Symposium,* Columbus, Ohio, June 9-11, 2003.
13. C. Wang, C. Thorpe and S. Thrun. "Online Simultaneous Localization and Mapping with Detection and Tracking of Moving Objects: Theory and Results from a Ground Vehicle in Crowded Urban Areas" in *Proceedings of the IEEE International Conference on Robotics and Automation,* May, 2003.
14. T.W. Fong, C. Thorpe, and C. Baur, "Multi-Robot Remote Driving with Collaborative Control" in *Proceedings of the IEEE Transactions on Industrial Electronics*, 2003.
15. T.W. Fong, C. Thorpe, and C. Baur, "Robot, Asker of Questions" *in Proceedings of the Robotics and Autonomous Systems*, 2003.
16. S. McNeil, D. Duggins, C. Mertz, A. Suppe, and C. Thorpe, "A Performance Specification for Transit Bus Side Collision Warning System" ITS2002, *in Proceedings of 9th World Congress on Intelligent Transport Systems*, October, 2002.
17. C. Thorpe, R. Aufrere, J.D. Carlson, D. Duggins, T.W. Fong, J. Gowdy, J. Kozar, R. MacLachlan, C. McCabe, C. Mertz, A. Suppe, C. Wang, and T. Yata, "Safe Robot Driving" in *Proceedings of the International Conference on Machine Automation (ICMA 2002)*, September, 2002.
18. C. Wang and C. Thorpe, Simultaneous Localization and Mapping with Detection and Tracking of Moving Objects" in *Proceedings of the IEEE International Conference on Robotics and Automation*, May, 2002.
19. C. Thorpe, D. Duggins, J. Gowdy, R. MacLachlan, C. Mertz, M. Siegel, A. Suppe, C. Wang, and T. Yata, "Driving in Traffic: Short-Range Sensing for Urban Collision Avoidance" in *Proceedings of SPIE: Unmanned Ground Vehicle Technology IV*, Vol. 4715, April, 2002.
20. T.W. Fong, C. Thorpe, and C. Baur, "Robot as partner: vehicle teleoperation with collaborative control" Multi-Robot Systems: From Swarms to Intelligent Automata, Alan Schultz and Lynne Parker, ed., Kluwer, 2002.
21. C. Mertz, J. Kozar, J.R. Miller, and C. Thorpe, "Eye-safe Laser Line Striper for Outside Use" IV 2002, in *Proceedings of the IEEE Intelligent Vehicle Symposium*, June, 2002., December, 2001.
22. T.W. Fong, C. Thorpe, and C. Baur, "Collaboration, Dialogue, and Human-Robot Interaction" in *Proceedings of the 10th International Symposium of Robotics Research*, Lorne, Victoria, Australia, Springer-Verlag, London, November, 2001.
23. James A. Misener, Chuck Thorpe, Mel Siegel, Dirk Langer, Paul Griffiths, "Putting Cooperation to the Test: Experimental Evaluation of 'Sensor-Friendly' Collision Avoidance Systems" in *Proceedings of the 11th Annual Meeting of the Intelligent Transportation Society of America,* Miami, Florida, June 4 - 7, 2001.
24. Field Robots. C. Thorpe, H. Durrant-Whyte. In proceedings of the 10th International Symposium on Robotics Research, Lorne, Victoria, Australia. London: Springer-Verlag.
25. Collaboration, dialogue and human-robot interaction. T. Fong, C. Thorpe, C. Baur. In proceedings of the 10th International Symposium on Robotics Research, Lorne, Victoria, Australia. London: Springer-Verlag.

26. Side Collision Warning Systems for Transit Buses. C. Mertz, S. McNeil and C. Thorpe. IV 2000, IEEE Intelligent Vehicle Symposium, October, 2000.
27. Remote Driving With A Multisensor User Interface. G. Terrien, T. Fong, C. Thorpe, and C. Baur. SAE 30th International Conference on Environmental Systems, July 2000.
28. Structure from Motion without Correspondence. F. Dellaert, S. Seitz, C. Thorpe and S. Thrun. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR'00), June 2000.
29. A New Focus for Side Collision Warning Systems for Transit Buses. S. McNeil, C. Thorpe and C. Mertz. ITS2000, Intelligent Transportation Society of America's Tenth Annual Meeting and Exposition, May 2000.
30. Sensor Fusion Based user Interface for Vehicle Teleoperation. R. Meieer, T. Fong, C. Thorpe and C. Baur. International Conference on Field and Service Robotics (FSR '99), August 1999.
31. Collaborative Control: A Robot-Centric Model for Vehicle Teleoperation. T. Fong, C. Thorpe and C. Baur. AAAI 1999 Spring Symposium: Agents with Adjustable Autonomy, March 1999.
32. A Trinocular Stereo System for Highway Obstacle Detection. T. Williamson and C. Thorpe. 1999 International Conference on Robotics and Automation (ICRA '99), IEEE, 1999.
33. Model-Based Car Tracking Integrated with a Road-Follower. F. Dellaert, D. Pomerleau and C. Thorpe. International Conference on Robotics and Automation, May 1998.
34. Gait Planning and Reactive Control of a Hexapod Walking Robot. D. Wettergreen and C. Thorpe. Proceedings of ICRA '98, 1996.
35. Machine Learning and Human Interface for the CMU Navlab. C. Thorpe. Proc. IEEE Conference on Computer vision for Space Applications, September 1993.
36. Exploring Mount Erebus by Walking Robot. D. Wettergreen, C. Thorpe and W. L. Whittaker. International Conference of Intelligent Autonomous Systems, 1993, pp. 72-81.
37. STRIPE: Supervised TeleRobotics Using Incremental Polygonal Earth Geometry. J. Kay and C. Thorpe. International Conference on Intelligent Autonomous Systems, 1993, pp. 399-406.
38. Vision and Navigation for the Carnegie Mellon Navlab. C. Thorpe and T. Kanade. Proceedings of DARPA Image Understanding Workshop, 1985, pp. 143-152.
39. Integrating Position Measurement and Image Understanding for Autonomous Vehicle Navigation. C. Thorpe, O. Amidi, J. Gowdy, M. Hebert and D. Pomerleau. Proceedings of 2nd International Workshop on High Precision Navigation, November 1991.
40. Geometric Camera Calibration Using Systems of Linear Equations. K. Gremban, C. Thorpe and T. Kanade. Proceedings of Image Understanding Workshop, Morgan Kaufmann Publishers, Inc., 1988, pp. 820-825.
41. Stereo and Neural Network-Based Pedestrian Detection. Liang Zhao and Chuck Thorpe Proc. 1999 Int'l Conf. on Intelligent Transportation Systems, Tokyo, Japan, Oct. 5-7, 1999
42. Adaptive Vehicle Motion Estimation and Prediction, Liang Zhao and Chuck Thorpe Proc. 1998 SPIE Mobile Robot, Boston, Nov. 1-6, 1998
43. Super-Resolved Tracking of Planar Surface Patches. Frank Dellaert, Chuck Thorpe and Sebastian Thrun, Proc. IEEE/RSJ International Conference on Intelligent Robotic Systems (IROS), Victoria, B.C., Canada, October 13-17, 1998.
44. Jacobian Images of Super-Resolved Texture Maps for Model-Based Motion Estimation and Tracking, Frank Dellaert, Sebastian Thrun and Chuck Thorpe. Fourth IEEE Workshop on Applications of Computer Vision (WACV), Princeton, New Jersey, October 19-21st 1998.

45. Laser Intensity-Based Obstacle Detection. John Hancock, Martial Hebert, Chuck Thorpe. Proceedings of the International Conference on Intelligent Robots and Systems, October, 1998.
46. Mobility Planning for Autonomous Navigation of Multiple Robots in Unstructured Environments, Martial Hebert, Anthony Stentz, and Chuck Thorpe. In Proceedings of ISIC/CIRA/ISAS Joint Conference on the Science and Technology of Intelligent Systems, Gaithersburg MD, September, 1998.
47. Detection of Small Obstacles at Long Range Using Multibaseline Stereo, Todd Williamson and Charles Thorpe. Proceedings of the 1998 IEEE International Conference on Intelligent Vehicles, Stuttgart, Germany, October, 1998.
48. Predicting Lane Position for Roadway Departure Prevention.. Parag H. Batavia, Dean A. Pomerleau, Charles E. Thorpe Proceedings of the IEEE Intelligent Vehicles Symposium, Stuttgart, Germany, October 28-30, 1998.
49. Qualitative and Quantitative Car Tracking from a Range Image Sequence. Liang Zhao, Chuck Thorpe. In CVPR 98, Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, June 23-25, 1998, Santa Barbara, California, USA
50. A Specialized Multibaseline Stereo Technique for Obstacle Detection. Todd Williamson and Charles Thorpe. In CVPR 98, Proceedings of IEEE Conference on Computer Vision and Pattern Recognition, June 23-25, 1998, Santa Barbara, California, USA
51. Overtaking Vehicle Detection Using Implicit Optical Flow. Parag H. Batavia, Dean A. Pomerleau, and Charles E. Thorpe, Proceedings of the IEEE Intelligent Transportation Systems Conference, Boston, MA, Nov. 9-12, 1997
52. Functional sensor modeling for Automated Highway Systems Simulations. C. Unsal, R. Sukthankar, and C. Thorpe. In Proceedings of IEEE Conference on Intelligent Transportation Systems, Boston Mass, November 1997.
53. The 1997 Automated Highway Free Agent Demonstration. C. Thorpe, T. Jochem, D. Pomerleau. In Proceedings of IEEE Conference on Intelligent Transportation Systems, Boston Mass, November 1997.
54. Automated Highways and the Free Agent Demonstration. C. Thorpe, T. Jochem, D. Pomerleau. In Proceedings of International Symposium on Robotics Research, Hayama Japan, October 1997.
55. Performance Specification Development for Roadway Departure Collision Avoidance Systems. D. Pomerleau, L. Emery, and C. Thorpe. In Proceedings of ITS World Congress, October 1997, Berlin Germany.
56. Robust Car Tracking using Kalman filtering and Bayesian templates. Frank Dellaert and Chuck Thorpe, SPIE Conference on Intelligent Transportation Systems, Pittsburgh, PA, October,1997
57. A Distributed Tactical Reasoning Framework for Intelligent Vehicles. Rahul Sukthankar, Dean Pomerleau, Charles E. Thorpe, Proc. SPIE Conference on Intelligent Systems and Advanced Manufacturing, October 1997
58. A Hybrid Human-Computer Autonomous Vehicle Architecture, M. Bayouth, I. Nourbakhsh, C.E. Thorpe, The Third ECPD International Conference on Advanced Robotics, Intelligent Automation and Active Systems, September 1997.
59. Mixed Traffic and Automated Highways. C. Thorpe. In Proceedings of IROS 97, Grenoble France, September 1997.
60. Map Building with Radar and Motion Sensors for Automated Highway Vehicle Navigation. K. Kimoto and C. Thorpe. In Proceedings of IROS 97, Grenoble France, September 1997.

61. Adaptive Intelligent Vehicle Modules for Tactical Driving. R. Sukthankar, J. Hancock, S. Baluja, D. Pomerleau, and C. Thorpe. Proc. AAAI Workshop on Adaptive Intelligent Agents, 1996.
62. Vision Based Intersection Navigation, Jochem, Todd M., Pomerleau, Dean A., and Thorpe, Charles E. IEEE Symposium on Intelligent Vehicles, September 18-20, 1996, Tokyo, Japan.
63. Combining Multiple Goals in a Behavior-Based Architecture. J. Rosenblatt and C. Thorpe. In Proceedings of IROS, Pittsburgh PA, 1995.
64. ELVIS: Eigenvectors for Land Vehicle Image System. J. Hancock, C. Thorpe. In Proceedings of IROS, Pittsburgh PA, 1995. Also appeared as Carnegie Mellon Robotics Institute Technical Report CMU-RI-TR-94-43, December 1994.
65. Operator Interface Design Issues In A Low-Bandwidth And High-Latency Vehicle Teleoperation System. J. Kay and C. Thorpe. In International Conference on Environmental Systems, 1995. Appears as SAE Technical Report 951485. Warrendale, PA: Society of Automotive Engineers International.
66. Robots, Transportation, and Society. C. Thorpe and D. Pomerleau. In Proceedings of ISRR-7, Munich Germany, 1995; also in proceedings of International Workshop on Advanced Robotics and Intelligent Machines, below.
67. Jochem, D. Pomerleau, and C. Thorpe: "Vision Guided Lane Transition," 1995 IEEE Symposium on Intelligent Vehicles, Detroit, Michigan, September 25-26, 1995.
68. Sukthankar, D. Pomerleau, and C. Thorpe: "SHIVA: Simulated Highways for Intelligent Vehicle Algorithms," 1995 IEEE Symposium on Intelligent Vehicles, Detroit, Michigan, September 25-26, 1995.
69. Jochem, D. Pomerleau, and C. Thorpe: "Vision-Based Neural Network Road and Intersection Detection and Traversal," Int'l Conf. on Intelligent Robots and Systems (IROS '95), Pittsburgh, PA, August, 1995.
70. AVCS Research at Carnegie Mellon University. D. Pomerleau, C. Thorpe, D. Langer, J.K. Rosenblatt, R. Sukthankar, R. In Proceedings of Intelligent Vehicle Highway Systems, 1994.
71. MANIAC: A Next Generation Neurally-Based Autonomous Road Follower. T. Jochem, D. Pomerleau, and C. Thorpe. In Proceedings of International Conference on Intelligent Autonomous Systems (IAS-3), Pittsburgh, PA, February 15-18, 1993.
72. Intersection Detection in the YARF Road Following System. K. Kluge and C. Thorpe. In Proceedings of IAS-3, Pittsburgh, 1993.
73. Supervised Telerobotics Using Incremental Flat-Earth Geometry: STRIFE. J. Kay and C. Thorpe. In Proceedings of IAS-3, Pittsburgh, 1993.
74. Representation and Recovery of Road Geometry in YARF. Intelligent Vehicles 92. K. Kluge and C. Thorpe.
75. Gait Generation for Legged Robots. D. Wettergreen and C. Thorpe. IROS 92 Conference, Raleigh NC, July 1992.
76. Sonar Based Outdoor Vehicle Navigation and Collision Avoidance. D. Langer and C. Thorpe. IROS 92 Conference, Raleigh NC, July 1992.
77. UNSCARF, A Color Vision System for the Detection of Unstructured Roads. J. Crisman and C. Thorpe. In Proceedings of IEEE International Conference on Robotics and Automation, 1991.
78. Navlab 90: Neighborhood Navigation. In refereed Video Proceedings of IEEE International Conference on Robotics and Automation, 1991.
79. Single Leg Walking with Integrated Perception, Planning, and Control. E. Krotkov, R. Simmons and C. Thorpe. In Proceedings of IROS 90. Winner of Best Paper award.

80. Simulation of the Ambler Environment. H. Thomas, D. Wettergreen and C. Thorpe. In Proceedings of 23rd Pittsburgh Conference on Modeling and Simulation, 1990.
81. Planning Strategies for the Ambler Walking Robot. D. Wettergreen, H. Thomas and C. Thorpe. In Proceedings of IEEE International Conference on Systems Engineering, 1990.
82. Against Complex Architectures. C. Thorpe and A. Stentz. In Proceedings of the 6th International Symposium on Unmanned Untethered Submersibles. June 1989.
83. Explicit Models for Road Following. K. Kluge and C. Thorpe. In Proceedings of IEEE Conference on Robotics and Automation. May 1989.
84. Color Vision for Road Following. J. Crisman and C. Thorpe. In Proceedings of SPIE Conference on Mobile Robots, November 1988.
85. Geometric Calibration using Systems of Linear Equations. K. Gremban, C. Thorpe and T. Kanade. In Proceedings of IEEE Conference on Robotics and Automation, April 1988.
86. A Feasibility Study for Long Range Autonomous Underwater Vehicle. M. Hebert, C. Thorpe, S. Dunn, J. Cushieri, P. Rushfeldt, W. Girodet, and P. Schweitzer. In Proceedings of Fifth International Symposium on Unmanned Untethered Submersible Technology, pages 1-13. University of New Hampshire, June, 1987.
87. An Architecture for Sensor Fusion in a Mobile Robot. S. Shafer, A. Stentz, and C. Thorpe. In Proceedings of 1986 IEEE International Conference on Robotics and Automation, San Francisco CA. March 1986.
88. Integrated Path Planning and Dynamic Steering Control for Autonomous Vehicles. B. Krogh and C. Thorpe. In Proceedings of 1986 IEEE International Conference on Robotics and Automation, San Francisco CA. March 1986.
89. First Results in Robot Road-Following. R. Wallace, A. Stentz, C. Thorpe, H. Moravec, W. Whittaker, and T. Kanade. In Proceedings of IJCAI-85, Los Angeles CA. August 1985.
90. An Architecture for Autonomous Vehicle Navigation. C. Thorpe and A. Stentz. In Proceedings of the Fourth International Symposium on Unmanned Untethered Submersible Technology, Durham, NH. June 1985.
91. Experiments and Thoughts on Visual Navigation. C. Thorpe, L. Matthies and H. Moravec. In Proceedings of 1985 IEEE International Conference on Robotics and Automation, St. Louis MO. March 1985.
92. Experience with Visual Robot Navigation. L. H. Matthies. In Proceedings of IEEE Oceans-84. September 1984.
93. Path Relaxation: Path Planning for a Mobile Robot. C. Thorpe. In Proceedings of AAAI-84. August, 1984
94. An Analysis of Interest Operators for FIDO. C. Thorpe. In Proceedings of IEEE Computer Vision Workshop. April, 1984
95. Correspondence in Line Drawings of Multiple Views of Objects. C. Thorpe and S. Shafer In Proceedings of IJCAI-83. August, 1983
96. Underwater Landmark Identification. C. Thorpe. In Proceedings of the Second International Computer Engineering Conference American Society of Mechanical Engineers, August, 1982

Conference Articles – Invited

1. Dependable Perception for Robots. C. Thorpe, O. Clatz, D. Duggins, J. Gowdy, R. MacLachlan, J. R. Miller, C. Mertz, M. Siegel, C.-C. Wang, T. Yata. In Proceedings of International Advanced Robotics Programme IEEE Robotics and Automation Society, Seoul, Korea, May 2001.

2. Mobility Planning for Autonomous Navigation of Multiple Robots in Unstructured Environments. M. Hebert, A. Stentz, C. Thorpe. In Proceedings of ISIC / CIRA / ISAS Joint Conference on the Science and Technology of Intelligent Systems, Gaithersburg MD, September 1998.
3. Mobile Robots and Smart **C**ars. C. Thorpe. In Proceedings of First International Conference on Field and Service Robotics (FSR 97), Canberra Australia, December 1997.
4. Robots, Transportation, and Society, C. Thorpe and D. Pomerleau, and Mobile Robotics: Perspectives and Realities, C. Thorpe and M. Hebert. Keynote addresses. In proceedings of International Workshop on Advanced Robotics and Intelligent Machines, University of Salford, Manchester, U.K., April 1996.
5. A Simulation and Design System for Tactical Driving Algorithms. R. Sukthankar, J. Hancock, D. Pomerleau and C. Thorpe. Proceedings of Al, Simulation and Planning in High Autonomy Systems, 1996.
6. Mobile Robotics: Perspectives and Realities. C. Thorpe and M. Hebert. In proceedings of ICAR 95, Sant Feliu, Spain, September 1995. Also in International Workshop on Advanced Robotics and Intelligent Machines, above.
7. Smart Cars: The CMU Navlab. C. Thorpe, R. Coulter, M. Hebert, T. Jochem, D. Langer, D. Pomerleau, J. Rosenblatt, W. Ross, and A. Stentz. In Proc. of World Med 93, Marseille France, 1993.
8. Machine Learning and Human Interface for the CMU Navlab. C. Thorpe. In Proc. Computer Vision for Space Applications, Juan-les-Pins France, September 93. Also appears as Machine Learning and Human Interface for the CMU Navlab. Chuck Thorpe, Haralabos Athanassiou, Jennifer Kay, Tom Mitchell, and Dean Pomerleau. In Proc. 6th Int. Symposium on Robotics Research, T. Kanade and R. Paul, eds.
9. Keynote Address: Point-Counterpoint: Big Robots VS Little Robots. C. Thorpe. 21st Applied Imagery Pattern Recognition Workshop. SPIE, Washington DC, October 1992.
10. Integrating position measurement and image understanding for autonomous vehicle navigation. C. Thorpe, O. Amidi, J. Gowdy, M. Hebert, and D. Pomerleau. In Proceedings of 2nd International Workshop on High Precision Navigation, November 1991, University of Stuttgart, Germany, K. Linkwitz ed.
11. Autonomous Navigation of Structured City Roads. D. Aubert, K. Kluge, and C. Thorpe. In Proceedings of SPIE Mobile Robots V, 1990.
12. Annotated Maps for Autonomous Land Vehicles. C. Thorpe and J. Gowdy. In Proceedings of DARPA Image Understanding Workshop, 1990.
13. Carnegie Mellon Navlab Vision. C. Thorpe and T. Kanade. In Proceedings of DARPA Workshop on Image Understanding, May 1989.
14. Autonomous Land Vehicle Project at CMU. T. Kanade, C. Thorpe and W. Whittaker. In Proc. 1986 ACM Computer Conference. Feb 1986. Cincinnati, Ohio.

Technical Reports and Un-refereed Publications

1. T. Yata, C. Thorpe, and F. Dellaert, “Static Environment Recognition Using Omni-camera from a Moving Vehicle” tech. report CMU-RI-TR-02-12, Robotics Institute, Carnegie Mellon University, 2002.
2. Active Interfaces for Vehicle Teleoperation. T. Fong, C. Thorpe, C. Baur. SPIE Robotics and Machine Perception Working Group Newsletter, Vol. 10 (1). Bellingham, WA
3. Structure from Motion without Correspondence. F. Dellaert, S. Seitz, C. Thorpe and S. Thrun. Technical Report CMU-RI-TR-99-44.

4. Mosaicing a Large Number of Widely Dispersed, Noisy, and Distorted Images: A Bavesian Approach. F. Dellaert, S. Thrun and C. Thorpe. Technical Report CMU-RI-TR-99-34.
5. Detecting Overtaking Vehicles With Implicit Optical Flow. P. Batavia, D. Pomerleau and C. Thorpe. Technical Report CMU-RI-TR-97-28.
6. Applying Advanced Learning Algorithms to ALVINN. P. Batavia, D. Pomerleau and C. Thorpe. Technical Report CMU-RI-TR-96-31.
7. ELVIS: Eigenvectors for Land Vehicle Image System. J. Hancock and C. Thorpe. Technical Report CMU-RI-TR-94-43.
8. Panacea: An Active Sensor Controller for the ALVINN Autonomous Driving System. Rahul Sukthankar, Dean Pomerleau and Charles Thorpe. In Proc. 6th Int. Symposium on Robotics Research, T. Kanade and R. Paul, eds. Also Carnegie Mellon Robotics Institute Technical Report CMU-RI-TR-93-09, April 1993.
9. Third Annual Report for Perception for Outdoor Navigation. C. Thorpe and T. Kanade. Technical Report CMU-RI-TR-92-16.
10. Some Approaches to Finding Birds in Video Imagery. P. Allen and C. Thorpe. Technical report CMU-RI-TR-91-34.
11. Second Annual Report for Perception for Outdoor Navigation. C. Thorpe and T. Kanade. Technical Report CMU-RI-TR-91-28.
12. Color Image Processing for Navigation: Two Road Trackers. D. Aubert and C. Thorpe. Technical report CMU-RI-TR-90-09.
13. First Year End Report for Perception for Outdoor Navigation. C. Thorpe and T. Kanade. Technical report CMU-RI-TR-90-23.
14. Year End Report for Road Following at Carnegie Mellon. C. Thorpe and T. Kanade. CMU-RI-TR-88-04.
15. 1988 Year End Report for Road Following at Carnegie Mellon. C. Thorpe and T. Kanade. Technical Report CMU-RI-TR-89-05.
16. Book review: Robot Vision. C. Thorpe. In American Scientist, May 1987.
17. Book review: Walking Machines: an Introduction to Legged Robots. C. Thorpe. In American Scientist, March 1987.
18. Year End Report for Road Following at Carnegie Mellon. C. Thorpe and T. Kanade. CMU-RI-TR-87-11.
19. An Architecture for Sensor Fusion in a Mobile Robot. S. Shafer, A. Stentz and C. Thorpe. Technical Report CMU-RI-TR-86-09.
20. CMU Strategic Computing Vision Project Report: 1984 to 1985. T. Kanade and C. Thorpe. CMU Robotics Institute Technical Report, 1985.
21. FIDO: Vision and Navigation for a Mobile Robot. C. Thorpe. PhD Thesis, CMU, November 1984.
22. Autonomous Vehicle Navigation: Smart Vehicle Simulator Version 1. C. Thorpe and D. McKeown. Technical Report, Westinghouse Electric Corporation, December, 1982
23. Sonar Image Processing: AN Application of Template Matching Through Relaxation. C. Thorpe. Technical Report CMU-RI-TR-81-6.

Video Productions

1. Navlab 97
2. Navlab: Vision and Navigation 1984 - 1994.
3. ARPA Image Understanding Research 1993. T. Kanade, C. Thorpe, and J. Kay
4. Navlab Parallel Parking. D. Langer and C. Thorpe. 1992.
5. RACCOON: Real Time Autonomous Car Chaser Operating Optimally at Night. R. Sukthankar, D. Pomerleau, and C. Thorpe. 1992.

6. Navlab 92: Cross-Country Navigation.
7. Navlab 90: Neighborhood Navigation. In refereed Video Proceedings of IEEE International Conference on Robotics and Automation, 1991.
8. DARPA Image Understanding 1990.
9. The Navlab: Road Following 1984 to 1988. April 1989.
10. DARPA Image Understanding 1988.
11. Navlab 1987. May 1988.
12. SCVision 1986. Carnegie Mellon Robotics Institute, March 1987.
13. SCVision 1985. Carnegie Mellon Robotics Institute, 1986.

Awards

1. IEEE Intelligent Transportation Society "Institution Lead Award" to the Navlab group, 2009.
2. C. Wang, C. Thorpe and S. Thrun. Based Paper Award for "Online Simultaneous Localization and Mapping with Detection and Tracking of Moving Objects: Theory and Results from a Ground Vehicle in Crowded Urban Areas" in *Proceedings of the IEEE International Conference on Robotics and Automation*, May, 2003.
3. Vectors of Pittsburgh, "Man of the Year" Technology Award, 2002.
4. ROMAN 2001 Best Paper Award for "Multi-robot Driving with Collaborative Control."
5. Pennsylvania Quality Initiative Award, 1999, to the CMU Navlab group, for the 1998 Advanced Safety Bus Demonstration
6. The National Automated Highway Systems Consortium received three awards at the 1998 ITS America Annual Meeting: Outstanding Achievement in Research, Development and Innovation; Outstanding Achievement in Intelligent Vehicles; and Most Effective ITS Promotion by a Public-Private Partnership.
7. Newell Award for Research Excellence, 1997.
8. Best Paper award. Single Leg Walking with Integrated Perception, Planning, and Control. E. Krotkov, R. Simmons and C. Thorpe. In Proceedings of IROS 90.

INVITED LECTURES, PANELS, AND WORKSHOPS

- Six Quotes from Six Years in Qatar, C Thorpe, AAC&U Annual Meeting, January 2010, San Francisco
- Evaluating and Structuring International Opportunities, R. Monroe and C. Thorpe, AAC&U Annual Meeting, January 2010, San Francisco
- Qatar's Education City: A New Model in Higher Education. A Hasnah and C Thorpe, 2nd Higher Education Summit, Singapore, July 2010
- Navigation on the Carnegie Mellon Navlab: Integrating GPS with SLAM, Justin Carlson and Chuck Thorpe, Unmanned Vehicle Workshop, Istanbul, Turkey, June 2010
- Tampere University for the ICMA 2002 conference, September 9 – 13, 2002
- Zhejiang University, China, November 2002.
- Florida State University / Florida A&M University, First Sprint Distinguished Lecture, October 2002.
- "Unsolved Problems and Grand Challenges in Robotics", Computer Science and Telecommunications Board, September 2002.
- Yale University Vision Lunch, November 2001.
- ETA, Washington, DC, October 2001.
- INRIA, France, September 2001.
- LAAS, Toulouse, France: The Navlab Project: Automated and Assisted Driving, September 2001.

- National Technical University of Singapore: The Navlab Project: Automated and Assisted Driving, August 2001.
- Fluorescent Paint: Sensor-Friendly Vehicles and Roadways. Transportation Research Board, January 2000.
- ITS and Society. Invited Panel Discussion, ITSC 99, Tokyo, Japan, October 99
- Autonomous Land and Air Vehicles. Swedish “Mobile Autonomous Systems” program final workshop, Stockholm Sweden, September 99.
- Automated Road Vehicles : State of the Art and Research Problems. INRIA, Versailles France, September 99
- Robots and Intelligent Transportation: Separated at Birth? Invited Panel Presentation, IEEE International Conference on Robotics and Automation, May 1999
- Perception for Outdoor Navigation on Highways, Cross-Country, and in the Air, University of Tokyo, March 1999.
- Free Agent Demonstration, presentation to the SAE Future Transportation Technology Conference, San Diego CA, August 1997.
- Lecture to the British IEE, “Mobile Robots and Smart Cars”, March 97.
- Lecture to the CNO Strategic Studies Group, December 96.
- Lecture to the CNO Strategic Studies Group, December 95.
- Invited talk, "CAD-Based Vision and Reactive Robots", Second CAD-Based Vision Workshop, Seven Springs Resort, Pennsylvania, February 1994.
- Tsukuba University, January 1994.
- University of Tokyo, January 1994.
- Carnegie Science Academy, Carnegie Science Center, Pittsburgh, January 30 1993.
- CRIM, Montreal, December 9, 1992
- McGill University, December 9, 1992
- University of Toronto, December 10, 1992
- University of Pennsylvania GRASP lab seminar, October 1992.
- MIT AI seminar, September 1992.
- Invited tutorial, "Mobile Robots", at 2nd Singapore International Conference on Image Processing (ICIP-92), September 1992.
- Invited talk, "Navigation Research at CMU", Night Operations Workshop, September 1992.
- Invited talk, "Robotics Research at CMU", Ngee Ann Polytechnic, Singapore, September 1992.
- Invited participant, Workshop on Sensor-Based Mobile Robotics, Nice, France, May 1992
- Invited participant, NSF US/UK Workshop on Autonomous Underwater Vehicles and Subsea Robotics, 1990.
- Invited paper, "Outdoor Visual Navigation for Autonomous Robots", Intelligent Autonomous Systems International Conference, December 1989.
- Invited participant, NSF US/Norway Workshop on Cooperative Programs for Autonomous Undersea Vehicles and Subsea Robotics, November 1989.
- Invited participant, NATO Advanced Research Workshop on Sensory Systems for Robotic Control, October 1989.
- Invited panelist, "Robot Navigation" panel, IJCAI-89.
- Distinguished Alumnus Lecture, North Park College, March 1988.
- NATO Advanced Research Workshop on Autonomous Mobile Robots, May 1987.
- DARPA visit to Royal Army Research and Development Establishment (UK), February 1986.

- Second USAF/AIAA/NASA Conference on Robotics, Automation, and Advanced Computing for the National Space Program, March 1987. Invited paper on "New Generation Vision Technology for Autonomous Navigation", panel on "Future Directions in Space".