Faculty Vita: Alexander Stoytchev

I. Personal History and Professional Experience

A. Educational Background

- Ph.D., Computer Science, Georgia Institute of Technology, Atlanta, GA, USA (Aug. 2007)
- M.S., Computer Science, Georgia Institute of Technology, Atlanta, GA, USA (Dec. 2001)
- B.A., Computer Science, American University in Bulgaria, Blagoevgrad, Bulgaria
  Overall GPA 3.79/4.00 (Cum Laude). Major GPA 4.00. (May 1997)
- Technical High School of Digital Logic and Microprocessor Design, Pravetz, Bulgaria
  GPA 5.93/6.00. (May 1993)

B. List of Academic Positions since Final Degree

- Associate Professor and Director   (Aug. 2014 - present)
  Developmental Robotics Laboratory
  Department of Electrical and Computer Engineering
  Department of Computer Science (Courtesy Appointment)
  Faculty Affiliate, Human Computer Interaction Program (HCI)
  Faculty Affiliate, Virtual Reality Applications Center (VRAC)
  Iowa State University, Ames, IA
- Assistant Professor and Director   (Jan. 2008 - Aug. 2014)
  Developmental Robotics Laboratory
  Department of Electrical and Computer Engineering
  Department of Computer Science (Courtesy Appointment)
  Faculty Affiliate, Human Computer Interaction Program (HCI)
  Faculty Affiliate, Virtual Reality Applications Center (VRAC)
  Iowa State University, Ames, IA
- Adjunct Assistant Professor   (Sep. 2005 - Dec. 2007)
  Department of Computer Science
  Iowa State University, Ames, IA.

C. Honors, Recognitions, and Outstanding Achievements

- James Huntington Ellis Award for Excellence in Undergraduate Introductory Teaching (this is a university-level award that comes with a check for $1,500), Sep. 21, 2015.
- Warren B. Boast Undergraduate Teaching Award, Department of Electrical and Computer Engineering (2009, 2011, and 2014)
- NSF Research Experience for Undergraduates, Highlight Award (1-st place), Feb. 16, 2012. I was selected among all CISE/OCI NSF REU mentors in the country.
- Best Paper Award, 7-th IEEE International Conference on Development and Learning (ICDL), Monterey, CA, August 9-12, 2008.
- Outstanding Technical Paper Award, Georgia Tech Student Paper Contest sponsored by Science Applications International Corporation (SAIC) (March 2005)
- Best Student in Computer Science Award, American University in Bulgaria (April 1997)
- Member of MENSA Bulgaria (March 1997)

- Eighth place, National Programming Contest organized by Sofia University & PC Magazine (June 1996)
- Second place, National Math Olympiad, Sofia, Bulgaria (May 1996)
- Awarded Open Society Foundation Scholarship (1995-1996 and 1996-1997)
- President's List, American University in Bulgaria (Spring 1996)

D. Other Professional Employment

Pre-Doctoral Appointments/Research Assistantships

- Research assistant of professor Ron Arkin. Communication maintaining and communication recovering behaviors for a team of mobile robots connected via a wireless network. Autonomous robot navigation using GPS and map data. Funded under the DARPA MARS-2020 Program. Experiments and DARPA demo conducted at Fort Benning, Georgia. (Jun. 2003 - Dec. 2004)
- Research assistant of professor Ron Arkin. Multi-level learning in hybrid deliberative/reactive mobile robot architectural software systems. Sponsored by DARPA under the Mobile Autonomous Robot Software (MARS) Program. (Jan. 2001 - Aug. 2001)
- Research assistant of professor Ron Arkin. Developed perceptual algorithms for autonomous robot exploration of unknown building floors in search of biohazard materials. Sponsored by DARPA under the Tactical Mobile Robotics (TMR) Program. Participated in the DARPA TMR demo in Rockville, Maryland, September 2000. (Jul-Dec. 2000)
- Research assistant of professor Ron Arkin. Developed a Hybrid Deliberative/Reactive/ Motivational Robot Architecture for a service robot. Sponsored by the Humanoids Research Group at Honda R&D, Tokyo, Japan. Visited Honda R&D Labs in Tokyo. (Jun. 1999 - Jul. 2000)
- Research assistant of professors Irfan Essa and Ashwin Ram. Developed a robot architecture and perceptual algorithms for a Pet Robot that interacts naturally with people using gesture and speech recognition. Funded by Yamaha Co., Tokyo, Japan. (Aug. 1997 - Dec. 1998)
- Research assistant of Prof. Nikolay Nikolaev. Research in Neural Networks, Decision Trees, Genetic Algorithms, Genetic Programming, and Cellular Automata. (Sep. - Jun. 1994-1997)
- Research assistant of Dr. Valery Rankov. Conducted research in Parallel and Distributed Computations. (May-Sep. 1996)
- Research assistant of Prof. Borislav Roussev. Conducted research in VLSI Testing, Fault Modeling, and Concurrent Models of Computation. (May-Sep. 1994 and 1995)

- Summer Intern   (Jul. - Sep. 1998)
  Science and Technology Department
  BellSouth Telecommunications, Inc. Atlanta, GA.
- High School Teacher of Informatics   (Sep. 1996 - Jun. 1997)
  "St. Cl. Ochridsky" High School, Blagoevgrad, Bulgaria.
- Computer Support Assistant   (May-Sep. 1994 and 1995)
  Computer Center, American University in Bulgaria
  System administrator of Novel and UNIX servers
  System programmer, LAN and computer lab maintenance.

- Freelance programmer   (May 1994 - Jun. 1994)
  Developed a program for automatic song selection for a radio station.

E. Formally Invited Lectures and Invited Conference Presentations

Invited Talks (Off Campus)

- **Invited Speaker**, "Bootstrapping Common Sense: A Developmental Approach to Robotics," AAAI Spring Symposium on Interactive Multi-Sensory Object Perception for Embodied Agents, Stanford University (Mar 27, 2017)

- **Invited Speaker**, "Bootstrapping Common Sense: A Developmental Approach to Robotics," 2017 UI Computing Conference, The University of Iowa, Iowa City, IA (Feb 25, 2017)

- **Invited Talk**, "What Infants Can Teach Us About The Way We Program Robots," at the Ames Middle School for Little Cyclone Enrichment Camp and the Ames Public Library, Ames, IA, June 18th, 2014.

- **Invited Talk,** "Lessons to be learned from biologically inspired perception," The Oxford Summit on Robotics, Pembroke College, Oxford University, Oxford, UK, Sep. 18-20, 2013.

- **Invited Speaker**, "What Infants Can Teach Us About The Way We Program Robots," ICML 2013 Workshop on Robot Learning, Atlanta, GA, June 20th, 2013.

- **Invited Debate Team Member**, Debates at the ICRA 2013 Interactive Perception Workshop, Karlsruhe, Germany, May 6, 2013.

- **Invited Participant and Speaker**, "What Infants Can Teach Us About The Way We Program Robots," Dagstuhl Seminar on Mechanisms Of Ongoing Development in Cognitive Robotics (Seminar 13072), Schloss Dagstuhl, Germany, February 10-15, 2013.

- **Invited Talk**, "Developmental Approach to Robotic Intelligence," Humanoids 2012 Workshop on Developmental Robotics, Osaka, Japan, November 29, 2012.

- **Invited Talk**, "Developmental Approach to Robotic Intelligence," AIMSA 2012 Workshop on Advances in Robot Learning and Human-Robot Interaction, Varna, Bulgaria, September 12, 2012.

- **Invited Talk**, "A Developmental Approach to Robotic Intelligence," Fall 2011 GRASP Seminar, GRASP Lab, University of Pennsylvania (UPenn), Philadelphia, PA. October 14, 2011.

- **Invited Talk**, "A Developmental Approach to Robotic Intelligence," The 6th Barbados Workshop on Reinforcement Learning, Bellairs Institute, Holetown, Barbados, March 22, 2011.

- **Invited Talk**, "Research Highlights From The Developmental Robotics Lab," Ames IT Collaborative, Technology Park, Ames, IA. (September 9, 2010)

- **Invited Speaker,** "A Developmental Approach to Object Exploration and Manipulation," Robotics Workshop, International Joint Conference on Artificial Intelligence, Pasadena, CA, July 13, 2009.

- **Invited Talk,** "Developmental Robotics at Iowa State University," RSS Workshop "Creative Manipulation: Examples using the WAM," Robotics: Science and Systems Conference (RSS), University of Washington, Seattle, WA, June 29, 2009.

- **Invited Talk,** "Embodiment Grounding: When do physical 'nice to haves' become cognitive 'must haves'?" DARPA Complete Intelligence Workshop, Biosphere 2, Tucson, AZ, February 24-26, 2009.

- **Invited Talk,** "A Developmental Approach to Autonomous Tool Use," International Workshop on Natural and Artificial Cognition, Pembroke College, Oxford University, Oxford, UK, June 25-26, 2007.

Invited Talks, Seminars and Guest Lectures (On Campus)

- Semiar Talk, "The Singularity of Cognitive Catch-Up," HCI 591 Seminar (Nov 3, 2017)

- Invited Talk, "Come for the Jokes, Stay for the Lecture: Motivating your large classroom," Award Winning Faculty Series, Center for Excellence in Learning & Teaching (Apr 7, 2017)

- Invited Talk, "Bootstrapping Common Sense: A Developmental Approach to Robotics," The University Honors Program at Iowa State University (April 15, 2016)

- Invited Talk, "Research at the Developmental Robotics Laboratory," The Engineering Ambassador and Mentor Program at Iowa State University (April 7, 2016)

- Invited Talk, "Bootstrapping Common Sense: A Developmental Approach to Robotics," IEEE Region 4 Student Leadership Conference, Memorial Union, ISU (February 13, 2016)

- Invited Talk, "What Does a Faculty Member Do?," New Faculty Orientation session for all incoming ISU faculty, Organized by the Office of the Executive Vice President and Provost, Iowa State University (August 18, 2010)

- Invited Talk, "Research at the Developmental Robotics Laboratory," The Engineering Ambassador and Mentor (TEAM) Program, (November 5, 2009)

- Invited Talk, "What Does a Faculty Member Do?," New Faculty Orientation session for all incoming ISU faculty, Organized by the Office of the Executive Vice President and Provost, Iowa State University (August 19, 2009)

- "Quick Overview of Developmental Robotics," Mini lecture for ISU Alumni, class of 1959 (May 15, 2009)

- Seminars, CprE 294X: Program Discovery Class, series of 3 lectures, (Fall 2008)

- Seminar, CHI lunch, "The Sense of 'Self'," Iowa State, March 7, 2008.

- Invited talk, ECpE Special Interest Group in Robotics, Research overview, October 17, 2007.

- Seminar, Honors seminar (HON 321 R), Research overview, October 4, 2007.

- Seminar, HCI seminar, "The Sense of 'Self'," Iowa State, Sep. 28, 2007.

- Invited Talk, ISU Robotics Club, Latest research overview, Spring 2007.

- Colloquium, Department of Computer Science, "Out of Reach and Out of Sight: Examples of Autonomous Tool Use in Robots," Mar. 29, 2007.

- Invited Talk, ISU Robotics Club, "Meet the new professor," Fall 2005.

- Guest lecture, CS 7630 Autonomous Robotics, "Why Robotics is Fun," Georgia Tech.

- Guest lecture, CS 8803B Pattern Recognition, "How to Use Matlab," Georgia Tech.

- Guest Lecture, CS 4630 Robotics and Vision, "Multi-agent Robotics," Georgia Tech, Spring 2002.

- Guest Lecture, CS 4630 Robotics and Vision, "BASIC Stamp II Programming for Descartes Robots," Georgia Tech, Spring 2002.

F. Offices Held in Professional Societies

N/A

G. Editorships of Journals or Other Learned Publications

N/A

H. Grants and Contracts Received

External Grants

11. Proof Of Concept Initiative Application (Phase II), Submitted to the i6 initiative, Funded by the U.S. Department of Commerce. Alexander Stoytchev (PI), Vladimir Sukhoy (Co-PI), (July 15 2013–Feb. 28, 2014). **$50,000**.

10. Proof Of Concept Initiative Application, Submitted to the i6 initiative, Funded by the U.S. Department of Commerce. Alexander Stoytchev (PI), Vladimir Sukhoy (Co-PI), (Jan. 1 2013–Jul. 31, 2013). **$50,000**.

9. Tool Tracking. Funded by John Deere. Alexander Stoytchev (PI) with Eliot Winer (Co-PI), (Jan. 1, 2008–Dec. 31, 2010) **$370,328**. [My share: $317,649]

8. Tool Tracking (supplement). Funded by John Deere. Alexander Stoytchev (PI) with Eliot Winer (Co-PI), (2009) **$2,474**. [Funding for equipment purchase]

7. Virtual Teleoperation of Unmanned Aerial Vehicles (supplement). Funded by the Air Force Office of Scientific Research. Alexander Stoytchev (Co-PI) with Jim Oliver (PI) and Eliot Winer (Co-PI), (2007-2009). **$63,353.** [Funding to host supervisory panel visits]

6. Virtual Teleoperation of Unmanned Aerial Vehicles (phase III). Funded by the Air Force Office of Scientific Research. Alexander Stoytchev (Co-PI) with Jim Oliver (PI) and Eliot Winer (Co-PI) (May 15, 2007–May 14, 2011). **$4,338,000.** [My share for Phase II and Phase III combined: $633,442]

5. Virtual Teleoperation of Unmanned Aerial Vehicles (phase II). Funded by the Air Force Office of Scientific Research. Alexander Stoytchev (Co-PI) with Jim Oliver (PI), Derrick Parkhurst, and Eliot Winer (Co-PIs). (2006-2008). **$3,310,636.** [My share: see 6 above]

4. Evaluating the Quality of Welds (Phase II). Funded by John Deere & Co., Waterloo, IA. Alexander Stoytchev (PI) (2007-2008). **$20,000.**

3. Evaluating the Quality of Welds (pilot project). Funded by John Deere & Co., Waterloo, IA. Alexander Stoytchev (PI) (2007). **$18,508.**

2. Creation of a Real-Time Capability to Validate Welds (bridge funding). Funded by John Deere. Alexander Stoytchev (PI) with Eliot Winer (Co-PI) (2007). **$51,952.** [My share: approx. 50%]

1. Creation of a Real-Time Capability to Validate Welds. Funded by John Deere Des Moines Works (JDDMW). Alexander Stoytchev (Co-PI) with Eliot Winer (PI) (2006-2007). **$124,934.** [My share: approx. 50%]

Internal Grants

5. Bridge Grant, Graduate and Postdoctoral Bridge Funding Program, Funded by the Office of the SVP/Provost, the Department of Electrical and Computer Engineering, and the College of Engineering at ISU, (May-Aug, 2016). **$7,854**.

4. Bridge Grant, Graduate and Postdoctoral Bridge Funding Program, Funded by the College of Engineering and the Department of Electrical and Computer Engineering at ISU, (May-Aug, 2014). **$8,570**.

3. Proof Of Concept Initiative Application, Funded by ISURF, Alexander Stoytchev (PI), Vladimir Sukhoy (Co-PI), (Jan-Jul, 2012). **$20,000**.

2. Honors Summer Research Grants, Funded by the Honors Program at ISU:

   • Summer 2012: Alexander Stoytchev (faculty mentor), Kyle Tietz (student) **$1,000**.

   • Summer 2009: Alexander Stoytchev (faculty mentor), Connor Schenck (student) **$1,000**.

1. Honors Mentor Grants, Funded by the Honors Program at ISU:

   • Spring 2012: Alex Stoytchev (faculty mentor), Kyle Tietz, Paul Gerver (students) **$446**.

   • Spring 2011: Alexander Stoytchev (faculty mentor), Todd Wegter, Nicolas Cabeen, Tanner Borglum (students) **$274**.

   • Spring 2010: Alexander Stoytchev (faculty mentor), Eric Everett, Michael Sambol, Timothy Kalpin (students) **$450**.

   • Spring 2009: Alexander Stoytchev (faculty mentor), Connor Schenck, Scott Schroeder, Sakib Nazmus (students) **$225**.

I. Grant Review Panels (e.g., for Governmental Agencies, Educational Institutions)

- Independent expert, acting as a reviewer, for the monitoring of the implementation of the ROBOSKIN project. This was a 3-year commitment. The final review meeting was held at the Italian Institute of Technology in Genoa, Italy on June 28, 2012.

- Independent expert, acting as a reviewer, for the monitoring of the implementation of the ROBOSKIN project. The second project review meeting was held at École Polytechnique Fédérale de Lausanne (EPFL) in Lausanne, Switzerland on June 24, 2011.

- Independent expert, acting as a reviewer, for the monitoring of the implementation of the ROBOSKIN project. This is a large-scale project (4.6M Euros) which attempts to build an artificial skin for a robot that can cover large portions of the robot's body. The project is sponsored by the European Commission (the European version of NSF), Information Society and Media Directorate-General, Cognitive Systems, Interaction, Robotics. The first project review meeting was held at the Italian Institute of Technology (IIT) in Genoa, Italy on July 5, 2010.

- Grant Proposal Reviewer for the German Research Foundation (Deutsche Forschungsgemeinschaft, www.dfg.de), 2010.

J. Policy, Advisory or Corporate Panels or Boards (e.g., for Governmental Agencies, Educational Institutions, Companies)

N/A

II. Publications and Creative Works

Note: The meaning of the symbol(s) after a citation is the following:

# Denotes publication derived from my PhD dissertation

* Denotes publication that has undergone stringent editorial review by peers

+ Denotes publication that was invited and carries special prestige and recognition

s Denotes a peer-reviewed short paper or student abstract paper

When available, the conference acceptance rates are listed after each conference paper. All papers are available in PDF format from my web page (http://www.ece.iastate.edu/~alexs/papers/).

A. Doctoral Thesis Title

"Robot Tool Behavior: A Developmental Approach to Autonomous Tool Use," Ph.D. Dissertation, College of Computing, Georgia Institute of Technology, Aug. 2007.

B. Books Authored or Co-Authored (in print or accepted)

N/A

C. Books Edited or Co-Edited (in print or accepted)

N/A

D. Chapters in Books (in print or accepted)

1. **Stoytchev, A.**, "Learning the Affordances of Tools using a Behavior-Grounded Approach," (invited contribution). In "Affordance-Based Robot Control," Springer Lecture Notes in Artificial Intelligence (LNAI) 4760, E. Rome et al. (Eds.), pp. 140-158, 2008.   +

E. Monographs (in print or accepted)

N/A

F. Articles in Journals (in print or accepted)

9. Schenck, C., Sinapov, J., Johnston, D., and **Stoytchev, A.**, "Which Object Fits Best? Solving Matrix Completion Tasks with a Humanoid Robot," IEEE Transactions on Autonomous Mental Development, vol. 6, No. 3, pp. 226-240, September 2014.   *

8. Sinapov, J., Schenck, C., Staley, K., Sukhoy, V., and **Stoytchev, A.**, "Grounding Semantic Categories in Behavioral Interactions: Experiments with 100 Objects," Robotics and Autonomous Systems, Volume 62, Issue 5, Pages 632-645, May 2014.   *

7. Schenck, C., Sinapov, J., and **Stoytchev, A.**, "Which Object Comes Next: Grounded Order Completion by a Humanoid Robot," Journal of Cybernetics and Information Technologies, Volume 12, Number 3, pp. 3-16, 2012.   *

6. Griffith, S., Sinapov, J., Sukhoy, V., and **Stoytchev, A.**, "A Behavior-Grounded Approach to Forming Object Categories: Separating Containers from Non-Containers," IEEE Transactions on Autonomous Mental Development, Vol. 4, No. 1, pp. 54-69, March 2012.   *

5. Sinapov, J., Bergquist, T., Schenck, C., Ohiri, U., Griffith, S., and **Stoytchev, A.**, "Interactive Object Recognition Using Proprioceptive and Auditory Feedback," International Journal of Robotics Research, Vol. 30, No. 10, pp. 1250-1262, 2011.   *

4. Sinapov, J., Sukhoy, V., Sahai, R., **Stoytchev, A.**, "Vibrotactile Recognition and Categorization of Surfaces by a Humanoid Robot," IEEE Transactions on Robotics (T-RO). Vol. 27, No. 3, pp. 488-497, June 2011.   *

3. **Stoytchev, A.**, "Self-Detection in Robots: A Method Based on Detecting Temporal Contingencies," Robotica, volume 29, pp. 1-21, January 2011.   *,#

2. **Stoytchev, A.**, "Some Basic Principles of Developmental Robotics," IEEE Transactions on Autonomous Mental Development, Vol. 1, No. 2, pp. 122-130, August 2009.   *,#

1. **Stoytchev, A.** and Arkin, R., "Incorporating Motivation in a Hybrid Robot Architecture," Journal of Advanced Computational Intelligence and Intelligent Informatics, Vol. 8, No. 3, pp. 269-274, May 2004.   *

G. Creative Works (Exhibitions, Commissions, Competitions, Performances, Art or Architecture Executed)

5. Sukhoy, V., and **Stoytchev, A.**, "Detecting the Functional Components of Doorbell Buttons," Research Video, shown at the AI and Robotics Multimedia Fair, held in conjunction with the AAAI 2012 conference in Toronto, Ontario, Canada, July 24-26, 2012.

4. Griffith, S., Sukhoy, V., Wegter, T., and **Stoytchev, A.**, "Object Categorization in the Sink: Learning Behavior-Grounded Categories with Water," Research Video, shown at the AI and Robotics Multimedia Fair, held in conjunction with the AAAI 2012 conference in Toronto, Ontario, Canada, July 24-26, 2012.

3. Sukhoy, V., Georgiev, V., Wegter, T., Sweidan, R., and **Stoytchev, A.**, "Learning to Slide a Magnetic Card Through a Card Reader", Research Video, shown at the AI and Robotics Multimedia Fair, held in conjunction with the AAAI 2012 conference in Toronto, Ontario, Canada, July 24-26, 2012.

2. Griffith, S., Sinapov, J., Miller, M., and **Stoytchev, A.** (2009) "Toward Interactive Learning of Container and Non-Container Objects," Research Video, **Nominated for Best Narration**, IJCAI 2009 AI Video Competition (a.k.a., AI Oscars), July 14, 2009.

1. **Stoytchev, A.** and Tanawongsuwan, R. "Pepe: PErsonal PEt," Research Video, In Video Proceedings of the AAAI-98 Mobile Robot Exhibition, Madison, WI, July, 1998.

H. Bulletins, Reports, or Conference Proceedings That Have Undergone Stringent Editorial Review by Peers (in print or accepted).

48. Sinapov, J., Schenck, C., and **Stoytchev, A.**, "Learning Relational Object Categories Using Behavioral Exploration and Multimodal Perception," In Proceedings of the 2014 IEEE International Conference on Robotics and Automation (ICRA), Hong Kong, China, May 31-June 7, 2014. [48% acceptance rate]   *

47. Sinapov, J. and **Stoytchev, A.**, "Grounded Object Individuation by a Humanoid Robot," In Proceedings of the 2013 IEEE International Conference on Robotics and Automation, Karlsruhe, Germany, May 6-10, 2013. [39% acceptance rate]   *

46. Schenck, C., and **Stoytchev, A.**, "The Object Pairing and Matching Task: Toward Montessori Tests for Robots," In Proceedings of the Humanoids 2012 Workshop on Developmental Robotics, Osaka, Japan, November 29, 2012.   *

45. Griffith, S., Sukhoy, V., Wegter, T., and **Stoytchev, A.**, "Object Categorization in the Sink: Learning BehaviorGrounded Object Categories with Water," In Proceedings of the 2012 ICRA Workshop on Semantic Perception, Mapping and Exploration (SPME), Saint Paul, Minnesota, May 14, 2012.   *

44. Sukhoy, V., Georgiev, V., Wegter, T., Sweidan, R., and **Stoytchev, A.**, "Learning to Slide a Magnetic Card Through a Card Reader," In Proceedings of the 2012 IEEE International Conference on Robotics and Automation (ICRA), Saint Paul, Minnesota, May 14-18, pp. 2398-2404, 2012. [40% acceptance rate]   *

43. Griffith, S., Sukhoy, V., and **Stoytchev, A.**, "Using Sequences of Movement Dependency Graphs to Form Object Categories," In Proceedings of the 11th IEEE-RAS International Conference on Humanoid Robots (Humanoids), Bled, Slovenia, October 26-28, pp. 715-720, 2011. [acceptance rate: 14.7% oral, 62% overall]   *

42. **Stoytchev, A.**, "Baby Gym For Robots: A New Platform For Testing Developmental Learning Algorithms," In Proceedings of the 2011 AAAI Workshop on Lifelong Learning from Sensorimotor Experience, held at the 25-th National Conference on Artificial Intelligence (AAAI), San Francisco, CA, August 7, 2011.   *,^{s}

41. Sukhoy, V., Griffith, S., and **Stoytchev, A.**, "Toward Imitating Object Manipulation Tasks Using Sequences of Movement Dependency Graphs," In Proceedings of the 2011 RSS Workshop on The State of Imitation Learning: Understanding its Applications and Promoting its Adoption, held at the Robotics: Science and Systems (RSS) Conference, Los Angeles, CA, June 27, 2011.   *

40. Koonce, P., Dutell, V., Farrington, J., Sukhoy, V., and **Stoytchev, A.**, "Toward Learning to Solve Insertion Tasks: A Developmental Approach Using Exploratory Behaviors and Proprioception," In Proceedings of the 25-th National Conference on Artificial Intelligence (AAAI), San Francisco, CA, August 7-11, 2011.   *,^{s}

39. Sinapov, J. and **Stoytchev, A.**, "Object Category Recognition by a Humanoid Robot Using Behavior-Grounded Relational Learning," In Proceedings of the 2011 IEEE International Conference on Robotics and Automation (ICRA), Shanghai, China, May 9-13, pp. 184 - 190, 2011. [49% acceptance rate]   *

38. Sukhoy, V. and **Stoytchev, A.**, "Learning to Detect the Functional Components of Doorbell Buttons Using Active Exploration and Multimodal Correlation," In Proceedings of the 10-th IEEE International Conference on Humanoid Robots (Humanoids), Nashville, Tennessee, December 6-8, 2010. [acceptance rate: 21.5% oral, 77% overall]   *

37. Sinapov, J. and **Stoytchev, A.**, "The Odd One Out Task: Toward an Intelligence Test for Robots," In Proceedings of the 9th IEEE International Conference on Development and Learning (ICDL), Ann Arbor, Michigan, August 18-21, pp. 126-131, 2010. [acceptance rate: 29.6% oral, 66.6% overall] (**Best Student Paper Award, ICDL 2010**).   *

36. Sukhoy, V., Sinapov, J., Wu, L., and **Stoytchev, A.**, "Learning to Press Doorbell Buttons," In Proceedings of the 9-th IEEE International Conference on Development and Learning (ICDL), Ann Arbor, Michigan, August 18-21, pp. 132-139, 2010. [acceptance rate: 29.6% oral, 66.6% overall]   *

35. Sinapov, J. and **Stoytchev, A.**, "The Boosting Effect of Exploratory Behaviors," In Proceedings of the 24-th AAAI Conference on Artificial Intelligence, Atlanta, Georgia, USA, pp. 1613-1618, July 11-15, 2010. (**Nominated for Best Paper Award by a reviewer**). [26.9% acceptance rate]   *

34. Wu, L., Sukhoy, V., and **Stoytchev, A.**, "Toward Learning to Press Doorbell Buttons," In Proceedings of the 24-th AAAI Conference on Artificial Intelligence, Atlanta, Georgia, USA, pp. 1965-1966, July 11-15, 2010.   *,s

33. Griffith, S. and **Stoytchev, A.**, "Interactive Categorization of Containers and Non-Containers by Unifying Categorizations Derived From Multiple Exploratory Behaviors," In Proceedings of the 24-th AAAI Conference on Artificial Intelligence, Atlanta, Georgia, USA, pp. 1931-1932, July 11-15, 2010.   *,s

32. Swanson, M., Johnson, E., **Stoytchev, A.**, "Automated Weld Integrity Analysis Using 3D Point Data,", ASME 2010 World Conference on Innovative Virtual Reality (WINVR2010), Ames, Iowa, May 12-14, 2010.   *

31. Griffith, S., Sinapov, J., Sukhoy, V., and **Stoytchev, A.**, "How to Separate Containers From Non-Containers? A Behavior-Grounded Approach to Acoustic Object Categorization," In Proceedings of the 2010 IEEE International Conference on Robotics and Automation (ICRA), Anchorage, Alaska, pp. 1852 - 1859, May 3-8, 2010. [41.1% acceptance rate]   *

30. Sukhoy, V., Sahai, R., Sinapov, J., and **Stoytchev, A.**, "Vibrotactile Recognition of Surface Textures by a Humanoid Robot," In Proceedings of the Humanoids 2009 Workshop on "Tactile Sensing in Humanoids - Tactile Sensors and Beyond," held at the 9-th IEEE-RAS International Conference on Humanoid Robots, Paris, France, pp. 57-60, Dec. 7, 2009.   *

29. Miller, M. and **Stoytchev, A.**, "An Unsupervised Model of Infant Acoustic Speech Segmentation," In Proceedings of the Ninth International Conference on Epigenetic Robotics (EpiRob), Venice, Italy, November 12-14, 2009.   *

28. Bergquist, T., Schenck, C., Ohiri, U., Sinapov, J., Griffith, S., and **Stoytchev, A.**, "Interactive Object Recognition Using Proprioceptive Feedback," In Proceedings of the IROS 2009 Workshop: Semantic Perception for Mobile Manipulation, St. Louis, MO, Oct 15, 2009.   *

27. Sahai, R., Griffith, S., and **Stoytchev, A.**, "Interactive Identification of Writing Instruments and Writable Surfaces by a Robot," In Proceedings of the RSS 2009 Workshop: Mobile Manipulation in Human Environments, Seattle, WA, June 28, 2009.   *

26. Sinapov, J. and **Stoytchev, A.**, "From Acoustic Object Recognition to Object Categorization by a Humanoid Robot," In Proceedings of the RSS 2009 Workshop: Mobile Manipulation in Human Environments, Seattle, WA, June 28, 2009.   *

25. Griffith, S., Sinapov, J., Miller, M., and **Stoytchev, A.**, "Toward Interactive Learning of Object Categories by a Robot: A Case Study with Container and Non-Container Objects," In Proceedings of the 8th IEEE International Conference on Development and Learning (ICDL), Shanghai, China, June 4-7, 2009.   *

24. Sahai, R., Griffith, S., and **Stoytchev, A.**, "Toward Learning to Write by Identifying Writable Surfaces," Poster abstract at the 8th IEEE International Conference on Development and Learning (ICDL), Shanghai, China, June 4-7, 2009.   s

23. Sinapov, J., Wiemer, M., and **Stoytchev, A.**, "Interactive Learning of the Acoustic Properties of Household Objects," In Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Kobe, Japan, May 12 - 17, 2009. [43% acceptance rate] *

22. Glover, J., Russell, B., White, A., Miller, M., and **Stoytchev, A.**, "An Effective and Intuitive Control Interface for Remote Robot Teleoperation with Complete Haptic Feedback," In Proceedings of the 2009 Emerging Technologies Conference (ETC), Ames, IA, April 2-3, 2009. [70% acceptance rate] *

21. Miller, M., Wong, P., and **Stoytchev, A.**, "Unsupervised Segmentation of Audio Speech Using the Voting Experts Algorithm," In Proceedings of the Second Conference on Artificial General Intelligence (AGI), Arlington, Virginia, pp. 138-143, March 6-9, 2009. *

20. Miller, M. and **Stoytchev, A.**, "Unsupervised Audio Speech Segmentation Using the Voting Experts Algorithm," In NIPS 2008 workshop on Speech and Language: Learning-based Methods and Systems. Whistler, British Columbia, Canada, Dec. 12, 2008. *

19. Sinapov, J. and **Stoytchev, A.**, "Detecting the Functional Similarities Between Tools Using an Adaptive Hierarchical Representation of Outcomes," In Proceedings of the 7th IEEE International Conference on Development and Learning (ICDL), Monterey, California, Aug. 9-12, 2008. [acceptance rate: <u>32.9% oral</u>, 68.4% overall] *

18. Miller, M. and **Stoytchev, A.**, "Hierarchical Voting Experts: An Unsupervised Algorithm for Hierarchical Sequence Segmentation," In Proceedings of the 7th IEEE International Conference on Development and Learning (ICDL), Monterey, California, Aug. 9-12, 2008. [acceptance rate: 32.9% oral, <u>68.4% overall</u>] (**Best Paper Award, ICDL-2008**). *

17. Griffith, S., Sinapov, J. and **Stoytchev, A.**, "Toward Learning to Detect and Use Containers," Poster abstract 7th IEEE International Conference on Development and Learning (ICDL), Monterey, California, Aug. 9-12, 2008. s

16. Sinapov, J. and **Stoytchev, A.**, "Toward Autonomous Learning of an Ontology of Tool Affordances by a Robot," In Proc. of 23rd National Conference on Artificial Intelligence (AAAI), Chicago, IL, July 13-17, 2008. *,s

15. Miller, M. and **Stoytchev, A.**, "Hierarchical Voting Experts: An Unsupervised Algorithm for Segmenting Hierarchically Structured Sequences," In Proc. of 23rd National Conference on Artificial Intelligence (AAAI), Chicago, IL, July 13-17, 2008. *,s

14. Sinapov, J., Wiemer, M., and **Stoytchev, A.**, "Interactive Learning of the Acoustic Properties of Objects," In Proceedings of the RSS 2008 Workshop - Robot Manipulation: Intelligence in Human Environments, Zurch, Switzerland, June 28, 2008. *

13. **Stoytchev, A.**, "Toward Video-Guided Robot Behaviors," In Proceedings of the 7th International Conference on Epigenetic Robotics (EpiRob), pp. 165-172, Rutgers University, New Jersey, 2007. [66% acceptance rate] *,#

12. Sinapov, J. and **Stoytchev, A.**, "Learning and Generalization of Behavior-Grounded Tool Affordances," In Proceedings of the 6th IEEE International Conference on Development and Learning (ICDL), Imperial College, London, 11-13 July, 2007. [acceptance rate: <u>29% oral</u>, 59% overall] *

11. Sinapov, J. and **Stoytchev, A.**, "Learning Behavior-Grounded Tool Affordances with Generalization Across Different Tools," In Proceedings of the RSS 2007 Manipulation Workshop: Sensing and Adapting to the Real World, Atlanta, GA, June 30, 2007. *,s

10. **Stoytchev, A.**, "Five Basic Principles of Developmental Robotics," NIPS 2006 Workshop on Grounding Perception, Knowledge, and Cognition in Sensori-Motor Experience, Whistler, British Columbia, Canada, December 8, 2006.   *,#

9. **Stoytchev, A.**, "Autonomous Learning of Tool Affordances by a Robot," In Proc. of the 20th National Conference on Artificial Intelligence (AAAI), Pittsburgh, PA, July 9-13, 2005.   *,s,#

8. **Stoytchev, A.**, "Behavior-Grounded Representation of Tool Affordances," In Proc. of the IEEE International Conference on Robotics and Automation (ICRA), Barcelona, Spain, pp. 3071-3076, April 18-22, 2005. [45.4% acceptance rate] (**Outstanding Technical Paper Award, Georgia Tech Student Paper Contest sponsored by SAIC**)   *,#

7. **Stoytchev, A.**, "Toward Learning the Binding Affordances of Objects: A Behavior-Grounded Approach," AAAI Spring Symposium on Developmental Robotics, Stanford University, pp. 17-22, Mar 21-23, 2005.   *,#

6. **Stoytchev, A.**, "Toward a Behavior-Grounded Representation of Tool Affordances," In Proc. of the Fourth International Workshop on Epigenetic Robotics, Genoa, Italy, Aug. 25-27, 2004.   *,s,#

5. **Stoytchev, A.**, "Development and Extension of the Robot Body Schema," In Proceedings of the Third International Workshop on Epigenetic Robotics, Boston, MA, Aug. 4-5, 2003.   *,s,#

4. Martinson, E., **Stoytchev, A.**, Arkin, R. "Robot Behavioral Selection Using Q-learning," In Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), EPFL, Switzerland, Sep. 30 - Oct. 4, 2002.   *

3. **Stoytchev, A.** and Arkin, R., "Combining Deliberation, Reactivity and Motivation in the Context of a Behavior-Based Robot Architecture," In Proc. of the IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA), Banff, Alberta, Canada, July 29-August 1, 2001.   *

2. Diaz, J., **Stoytchev, A.**, and Arkin, R., "Exploring Unknown Structured Environments," In Proceedings of FLAIRS, Key West, Florida, May 2001.   *

1. Wu, J., Rankov, V., and **Stoichev, A.**, "Parallel Computations on LAN-connected Workstations," IASTED Eighth International Conference on Parallel and Distributed Computing and Systems, Chicago, IL, Oct. 1996.   *

I. Bulletins, Reports, or Conference Proceedings That Have Not Undergone Stringent Editorial Review by Peers (in print or accepted).

Technical Reports

5. **Stoytchev, A.**, "Developmental Robotics: Black Art or a Discipline Guided by Principles?", Dialog Column, AMD Newsletter–The newsletter of the Autonomous Mental Development Technical Committee, Vol 6, No 2, pp. 5-6, October 2009.

4. **Stoytchev, A.** "Computational Model for an Extendable Robot Body Schema," College of Computing Technical Report GIT-CC-03-44, October, 2003.   #

3. Martinson, E., **Stoytchev, A.** and Arkin, R. "Robot Behavioral Selection Using Q-learning," College of Computing Technical Report GIT-CC-01-19, 2001.

2. Endo, Y., MacKenzie, D., **Stoytchev, A.**, Haliburton, W., Ali, K., Balch, T., Cameron, J., and Chen, Z. "User Manual for MissionLab version 4.0," August 2000.

1. Tanawongsuwan, R., **Stoytchev, A.**, and Essa, I., "Robust Tracking of People by a Mobile Robotic Agent," GVU Center Technical Report GIT-GVU-99-19, February 25, 1999.

J. Abstracts (in print or accepted) and Technical Presentations

Technology Demonstrations

44. Short research presentation for the new Dean of Engineering during her first visit to the Dept. of Electrical and Computer Engineering. Developmental Robotics Lab (May 3, 2013)

43. Research presentation for the wife of the incoming ISU president during her first visit to the College of Engineering. Howe Hall Atrium (Dec. 13, 2011)

42. Robotics demos for a High-Profile Donor for the ECpE Department, Developmental Robotics Lab (Oct. 10, 2011)

41. Robotics demo for a visitor from Meidh, Co. Developmental Robotics Lab (Oct. 5, 2011)

40. Robotics demo for a visitor from the Neuroscience Department at the University of Minnesota. Developmental Robotics Lab (Sep. 26, 2011)

39. Robotics demo for an invited speaker form the University of Pittsburgh, Department of Neurobiology. Developmental Robotics Lab (Sep. 21, 2011)

38. Robotics demo for a representative from Lockheed Martin. Developmental Robotics Lab (Aug. 11, 2011)

37. ISEK (Iowa State Engineering Kids) Summer Robotics Camp for Kids (ages 8-10). Robotics demonstration, Developmental Robotics Lab (Jun. 16, 2011)

36. VEISHEA 2011, Robotics demonstration, Developmental Robotics Lab, ISU (Apr. 16, 2011)

35. Technology demonstration for visitors from BMW and John Deere. VRAC Haptics Lab (Mar. 8, 2011)

34. Robotics demo for a visitor from the Intelligence Lab at Fort Huachuca, AZ. Developmental Robotics Lab (Mar. 4, 2011)

33. Robotics demo for company representatives from Nova-Tech Engineering, Developmental Robotics Lab (Feb. 7, 2011)

32. Robotics demos for a High-Profile College Donor, Developmental Robotics Lab (Oct. 22, 2010)

31. Technology demonstration for Boeing Executives (Oct. 20, 2010)

30. ECpE Scholar's Fair, Robotics demo, Developmental Robotics Lab, ISU (Sep. 9, 2010)

29. VEISHEA 2010, Robotics demonstration, Developmental Robotics Lab, ISU (April 17, 2010)

28. ECpE Friday Activity at Noon (FAN) Demos, Developmental Robotics Lab, ISU (April 16, 2010)

27. Open Lab Night, Robotics demos, Department of Electrical and Computer Engineering, ISU, (November 5, 2009)

26. The Engineering Ambassador and Mentor (TEAM) Program, Robot demos, Developmental Robotics Lab, ISU (November 5, 2009)

25. Technology demonstration at ISU-Deere Day 2009 (Oct. 26, 2009)

24. ECpE Distinguished Lecture visitor, Robotics demo, Developmental Robotics Lab, ISU (Sep. 21, 2009)

23. ECpE Scholar's Fair, Robotics demo, Developmental Robotics Lab, ISU ($\sim$ 250 visitors) (Sep. 10, 2009)

22. Tool Tracking demonstration for John Deere Mangers, John Deere Des Moines Works, Ankeny, IA (June 24, 2009)

21. Science Channel, Interview and Robot Demos for the TV Show "Brink", Season 2, Episode 20 (aired on July 13, 2009, recorded on June 19, 2009)

20. RDECOM visitors, Robotics demonstration, Developmental Robotics Lab, ISU (June 17, 2009)

19. ISEK (Iowa State Engineering Kids) summer camp, Robotics demonstration, Developmental Robotics Lab, ISU (June 12, 2009)

18. Tool Tracking demonstration, John Deere Des Moines Works, Ankeny, IA (June 11, 2009)

17. VEISHEA 2009, Robotics demonstration, Developmental Robotics Lab, ISU (April 18, 2009)

16. 4-H Central Area Tech Team, Robotics Demo, Developmental Robotics Lab, ISU (April 4, 2009)

15. ETC Conference Demos, Robotics Demo, Developmental Robotics Lab, ISU (April 2-3, 2009)

14. Technology demonstration at ISU-Deere Day 2008 (Nov 13, 2008)

13. Ribbon Cutting Ceremony at the Electrical and Computer Engineering building dedication, Iowa State University. The ceremonial red ribbon was cut by the upper-torso humanoid robot built by the Developmental Robotics Laboratory. (Oct. 2, 2008)

12. Rockwell Collins and Japanese visitors, Robot Demos, VRAC (Sep. 10, 2008)

11. ECpE Scholar's Fair, Robotics demo, Iowa State University (Sep. 9, 2008)

10. Robotics demonstration for RAGBRAI 2008, Iowa State Campus (July 22, 2008)

9. Sauer-Danfoss Board of Directors campus visit, Robot Demos, VRAC (June 12, 2008)

8. Demonstration of the Barrett WAM robot, ISU Robotics club,(April, 2008)

7. Robotics demonstration for VEISHEA 2008, Iowa State Campus (April 12, 2008)

6. Robotics demonstration for the HCI Forum, Howe Hall, Iowa State Campus (April 3, 2008)

5. Technology demonstration at ISU-Deere Day 2007 (Oct 23, 2007)

4. Technology demonstration at ISU-Deere Day 2006 (Oct 26, 2006)

3. DARPA MARS-2020 program demo, Fort Benning, Georgia. Demonstrated communication maintaining and communication recovering behaviors for a team of mobile robots connected via a wireless network. Autonomous robot navigation using GPS & map data. (Dec. 1, 2004)

2. DARPA Tactical Mobile Robots (TMR) program demo, Rockville, Maryland. Demonstrated autonomous robot behaviors for building exploration in search of biohazards. (Sep. 28, 2000)

1. AAAI-98 Robot Exhibition. Demonstration of the Personal Pet (PePe) project, 15-th AAAI National Conference on Artificial Intelligence, Madison, Wisconsin. (Jul. 1998)

K. Book and Paper Reviews (in print or accepted)

N/A

L. Patents, Disclosures and Technology Transfer Activities

- "Method and System for Manufacturing an Article Using Portable Hand-Held Tools." Meyer, T., Hilby, M., Meyers, M., Stoytchev, A., Winer, E., Sinapov, J., Martinez, M., Miller, M., and Wong, P., Application Number: US 12/022,230. Filed on Jan. 30, 2008 (pending).

M. Consulting Activities

- Expert reviewer for the EU ROBOSKIN project over a three-year period (2010-2012). Details are listed above in the *Grant Review Panels* section.

N. Other

Ph.D. Dissertations Supervised

1. Sinapov, J. "Behavior-grounded multi-sensory object perception and exploration by a humanoid robot," Ph.D. Dissertation, Department of Computer Science & Human-Computer Interaction Program, Iowa State University, Ames, IA, December 2013.

M.S. Theses Supervised

3. Schenck, C., "Intelligence tests for robots: Solving perceptual reasoning tasks with a humanoid robot," M.S. Thesis, Department of Computer Science & Human-Computer Interaction Program, Iowa State University, Ames, IA, July 2013.

2. Griffith, S., "Separating containers from non-containers: A framework for learning behaviorgrounded object categories," M.S. Thesis, Department of Electrical and Computer Engineering & Human-Computer Interaction Program, Iowa State University, Ames, IA, July 2011. [**Runner up at the local ISU competition for the Midwestern Association of Graduate Schools (MAGS) Distinguished Thesis Award.**]

1. Miller, M. "Unsupervised segmentation of audio speech using the Voting Experts algorithm," M.S. Thesis, Department of Computer Science, Iowa State University, Ames, IA, July 2009.

Media Coverage

16. Quoted in "Curious Robots Will Teach Us About Ourselves," by Stephanie Pappas, Neo.life, published online on April 27, 2017.

15. "Developments aim to mimic child growth: ISU assistant professor's efforts lead to innovative approach to evolve robots," (lead story) by Rachel Trampel, Iowa State Daily, Volume 204, number 12, p. 1, September 9, 2009.

14. "Iowa State robot available for ribbon cuttings, birthday parties, uprisings," by Tim Stevens, Engadget (http://www.engadget.com/), on-line article, posted July 27, 2009.

13. "Iowa State University's Humanoid Robot," Plastic Pals, on-line article, (http://www.plasticpals.com/?p=9523), posted on July 25, 2009.

12. Science Channel, Interview and robot demos for the TV Show "Brink," lead story; Season 2, Episode 20, first aired on July 13, 2009.

11. "New ECpE Facilities Dedicated," Innovate: A Technology Update from the Iowa State University College of Engineering, p. 31, Spring 2009.

10. "Engineers Explore the Biomimetic World in Quest for 'Killer Apps'," by Mary Jo Glanville, Innovate: A Technology Update from the Iowa State University College of Engineering, p. 27-29, Spring 2009.

9. "Can Robots Be Programmed to Learn from Their Own Experiences? Researchers program robots to see if they can learn a very human trait: common sense," by Julian Smith, Scientific American, web edition, March 23, 2009.

8. "Can Robots Be Programmed to Learn from Their Own Experiences?" by Julian Smith, Reprinted from Scientific American by ACM TechNews, March 30, 2009.

7. "Two Minutes With An Engineer Developing Smarter Robots," by Mike Krapfl, Posted on the main Iowa State University web page, Feb. 9, 2009.

6. "A (very near) future with robots," by Mike Krapfl, Inside Iowa State, Volume XVIII, number 13, p. 3, January 30, 2009.

5. "That's Dedication," by Erin Rosacker, Inside Iowa State, Volume XVIII, number 7, p. 1, October 10, 2008.

4. "Coover Addition Gets Robotic Dedication," by Laura Kingery, Iowa State Daily, Volume 203, Number 29, p.3, October 3, 2008.

3. "The AAAI-98 Mobile Robot Exhibition," by Karen Haigh and Tucker Balch, AI Magazine, Volume 21, Number 1, pp. 67-72, Spring 2000.

2. The Personal Pet Project: Interviews and robot demonstrations. Fox 5 TV News (Atlanta), November 22, 1998.

1. "And Now, R2D2 for You, Too" by Peter H. Lewis, The New York Times, August 6, 1998.

O. Publications and Creative Works Submitted but Not Accepted:

N/A

III. Instruction and Supervision

A. Instruction for ISU

Associate Professor, Department of Electrical and Computer Engineering &
Faculty Affiliate, Human Computer Interaction Program, Iowa State University

Fall 2017	CprE 281: Digital Logic	301 students
Spring 2017	HCI/CprE/ComS 575: Computational Perception	19 students
Fall 2016	CprE 281: Digital Logic	260 students
Spring 2016	HCI/CprE/ComS 575: Computational Perception	25 students
Fall 2015	CprE 281: Digital Logic	252 students
Spring 2015	HCI/CprE/ComS 575: Computational Perception	13 students
Fall 2014	CprE 281: Digital Logic	198 students

Assistant Professor, Department of Electrical and Computer Engineering &
Faculty Affiliate, Human Computer Interaction Program, Iowa State University

Spring 2014	CprE 281: Digital Logic	87 students
Fall 2013	CprE 281: Digital Logic	129 students
Spring 2013	HCI/CprE/ComS 575: Computational Perception	27 students
Fall 2012	CprE 185: Intro to Problem Solving (Using C)	92 students
Spring 2012	HCI/CprE/ComS 575: Computational Perception	24 students
Fall 2011	CprE 185: Intro to Problem Solving (Using C)	125 students
Spring 2011	HCI/CprE 585X: Developmental Robotics	32 students
Fall 2010	CprE 185: Intro to Problem Solving (Using C)	93 students
Spring 2010	HCI/CprE/ComS 575: Computational Perception	31 students
Fall 2009	CprE 185: Intro to Problem Solving (Using C)	86 students
Spring 2009	HCI/ComS 575X: Computational Perception	42 students
Fall 2008	CprE 185: Intro to Problem Solving (Using C)	113 students
Spring 2008	HCI/ComS 575X: Computational Perception	32 students

All courses were 3 credits each (except CprE 281, which was 4 credits). I had one or more TAs for all classes. CprE 185 and CprE 281 had several lab sections that were taught by my TAs. The graduate classes also had distance-ed sections.

Adjunct Assistant Professor, Department of Computer Science, Iowa State University

Fall 2007	ComS 401: Projects in Computing	17 students
Fall 2007	ComS 207: Programming I (in Java)	120 students
Spring 2007	ComS/HCI 575X: Computational Perception	35 students
Fall 2006	ComS 401: Projects in Computing	12 students
Fall 2006	ComS 207: Programming I (in Java)	116 students
Spring 2006	ComS/HCI 575X: Computational Perception	42 students
Spring 2006	ComS 207: Programming I (in Java)	130 students
Fall 2005	ComS 610as: Developmental Robotics	23 students

All courses were 3 credits each. None of them had labs, but ComS 207 had several recitation sessions taught by my TAs. I had one or more TAs for all classes except ComS 610.

B. Non-ISU Instruction (including Short Courses, Workshops, Training)

Graduate Teaching Assistant, Georgia Institute of Technology, Atlanta, GA
(grading, guest lectures, homework and project specification)

Spring 2003	CS 7612 AI planning	20 students
Fall 2002	CS 8803 Computability, Algorithms, and Complexity	72 students
Summer 2002	CS 4750 Human Computer Interaction	45 students
Spring 2002	CS 4630 Robotics and Vision	17 students
Fall 2001	CS 7495 Computer Vision	45 students
Spring 1999	CS 6362 Applications of Artificial Intelligence	25 students
Winter 1999	CS 7323 Autonomous Robotics	25 students

Teacher of Informatics, "St. Cl. Ochridsky" High School, Blagoevgrad, Bulgaria
(I taught these classes at a local high school while I was a senior in college)

Spring 1997	Introduction to Computer Programming in C	8 students
Spring 1997	Introduction to Personal Computers	25 students
Fall 1996	Introduction to Computer Programming in C	8 students
Fall 1996	Introduction to Personal Computers	25 students

Undergraduate Teaching Assistant, American University in Bulgaria
(homework grading, writing and testing sample programs)

- COS 220 Intro to Computer Science
- COS 301 Fundamentals of Programming Languages
- COS 401 Compiler Theory
- COS 470 Artificial Intelligence
- COS 497 Algorithms

C. Curricular Development Activity

So far I have developed 6 courses at ISU (4 undergraduate and 2 graduate). The semesters in which they were taught for the first time are shown in brackets. Revisions were made in subsequent semesters as needed. The Developmental Robotics class in Spring 2011 was significantly revised form the 2005 version, which is why it is listed twice.

- CprE 281: Intro to Problem Solving (Using C) (Fall 2013)
- HCI/CprE 585X: Developmental Robotics (Spring 2011)
- CprE 185: Intro to Problem Solving (Using C) (Fall 2008)
- ComS 401: Projects in Computing (Fall 2006)
- ComS 207: Programming I (in Java) (Spring 2006)
- ComS/HCI 575X: Computational Perception (Spring 2006)
- ComS 610as: Developmental Robotics (Fall 2005)

D. Supervision of Graduate Student Research for Which Candidate is Primary Advisor or Co-Advisor

Current Students:

1. Vladimir Sukhoy, Computer Engineering & Human Comp. Interaction, Ph.D. (Fall 2009-)

Former Students:

4. Jivko Sinapov, Ph.D. in Computer Science and HCI (Fall 2005-Fall 2013).
Thesis Title: "Behavior-grounded multi-sensory object perception and exploration by a humanoid robot," Department of Computer Science & Human-Computer Interaction Program, Iowa State University, Ames, IA, December 2013.
Best Student Paper Award Winner, 2010 IEEE International Conference on Development and Learning (ICDL).
Recipient of the Teaching Excellence Award, Graduate Program in Human Computer Interaction, Iowa State University, Spring 2013.
Jivko continued his education as a postdoc in robotics at the University of Texas at Austin. He is currently an Assistant Professor in Computer Science at Tufts University.

3. Connor Schenck, M.S. in Computer Science and HCI (Fall 2011-Summer 2013).
Recipient of the NSF Graduate Research Fellowship (2012-2015).
Recipient of the Barry M. Goldwater Scholarship (2010-2011).
Thesis Title: "Intelligence tests for robots: Solving perceptual reasoning tasks with a humanoid robot," Department of Computer Science & Human-Computer Interaction Program, Iowa State University, Ames, IA, July 2013.
Connor continued his graduate studies at the University of Washington, Seattle.

2. Shane Griffith, M.S. in Computer Engineering and HCI (Fall 2008-Summer 2011)
Recipient of the NSF Graduate Research Fellowship.
Thesis Title: "Separating containers from non-containers: A framework for learning behavior-grounded object categories," Department of Electrical and Computer Engineering & Human-Computer Interaction Program, Iowa State University, Ames, IA, July 2011.
[Runner up at the local ISU competition for the Midwestern Association of Graduate Schools (MAGS) Distinguished Thesis Award.]
Shane continued his graduate studies at Georgia Tech.

1. Matt Miller, M.S. in Computer Science, (Fall 2007-Summer 2009)
Thesis Title: "Unsupervised segmentation of audio speech using the Voting Experts algorithm," Department of Computer Science, Iowa State University, Ames, IA, July 2009.
Best Paper Award Winner, 2008 IEEE International Conference on Development and Learning (ICDL).
Matt continued his graduate studies at the MIT Media Lab.

E. Service on Thesis Committees Other than Own Advisees

Member of Thesis Defense Committee (Defense Date)

8. Benjamin Williams, Computer Engineering, M.S. (June 26, 2017)
7. Alex Whigham, Human Computer Interaction, Capstone Project (April 5, 2016)
6. Adam Faeth, Computer Eng. & Human Computer Interaction, Ph.D. (June 21, 2012)

5. Yi Wang, Computer Science, Ph.D. (April 12, 2012)

4. Vladimir Sukhoy, Mathematics, M.S. (July 12, 2011)

3. Ming Jia, Computer Engineering & Human Computer Interaction, Ph.D. (April 18, 2011)

2. Adwait Gupte, Electrical and Computer Engineering, M.S. (March 31, 2011)

1. Sateesh Kodavali, Human Computer Interaction & Computer Science, M.S. (Fall, 2010)

Member of Thesis Proposal Committee (Prelim Date)

4. Yi Wang, Computer Science, Ph.D. (May 13, 2011)

3. Adam Faeth, Computer Eng. & Human Computer Interaction, Ph.D. (May 17, 2010)

2. Ming Jia, Computer Engineering & Human Computer Interaction, Ph.D. (Jan 12, 2010)

1. Tyler Streeter, Mechanical Eng. & Human Computer Interaction, Ph.D. (June 11, 2009)

Member of Program of Study Committees

11. Xiaoqian Mu, Computer Science, Ph.D.

10. Benjamin Williams, Computer Engineering, M.S.

9. Uriah Tobey, Computer Science, Ph.D.

8. Taylor Bergquist, Computer Science, M.S.

7. Adwait Gupte, Electrical and Computer Engineering, M.S.

6. Adam Faeth, Computer Engineering & Human Computer Interaction, Ph.D.

5. Yi Wang, Computer Science, Ph.D.

4. Ming Jia, Computer Engineering & Human Computer Interaction, Ph.D.

3. Sateesh Kodavali, Human Computer Interaction and Computer Science, M.S.

2. Tyler Streeter, Mechanical Engineering & Human Computer Interaction, Ph.D.

1. Lucas Bonansea, Human Computer Interaction & Computer Science, M.S.

F. Supervision of Post-Doctoral Students and Professional Staff

N/A

G. Supervision of Undergraduate Research and Independent Study

Supervisor, Independent Study Project

6. Thomas Reins, Computer Engineering (Spring 2018)

5. Robert Peck, Mechanical Engineering (Spring 2009)

4. Frederick Thompson, Mechanical Engineering (Fall 2008)

3. Steven Lischer, Mechanical Engineering (Spring 2008)

2. Mark Wiemer, Electrical and Computer Engineering (Spring 2008)

1. Peter Wong, Electrical and Computer Engineering (Fall 2006)

Mentor, NSF Research Experience for Undergraduates (REU)

4. Veselin Georgiev (Southeast Missouri State), Todd Wegter (Iowa State University), Ramy Sweidan (Rice University). NSF REU in Human Computer Interaction, (Summer 2011).

3. Philip Koonce (Swarthmore College), Vasha Dutell (University of Oregon), Jose Farrington (University of Puerto Rico at Rio Piedras). NSF REU in HCI, (Summer 2010).

2. Ugonna Ohiri (University of Maryland, Baltimore County), Taylor Bergquist and Connor Schenck (Iowa State University), NSF REU in HCI, (Summer 2009).

1. Allison White (Lehigh University), Brian Russell (University of Arkansas at Fayetteville), John Glover (DePauw University), NSF REU in HCI, (Summer 2008).

Mentor, Senior Design Project

2. Senior Design Class (ECpE 492). Design and implementation of artificial finger nails for a humanoid robot. Students mentored: Ritika Sahai and Joseph Coleman. (Fall 2009 & Spring 2010)

1. Senior Design Class (ECpE 492). Design and build a humanoid robot head.
   Students mentored: Andrew Taylor, Cody Genkinger,Dan Potratz, Jason Pollard, Tim Meer. (Fall 2008 & Spring 2009)

Mentor, Senior Honors Project

2. Nathan De Graaf (Spring 2018)

1. Kyle Tietz (Spring 2015)

Mentor, Honors Credit

1. Shuang Li (Fall 2017)

Mentor, Freshman Honors Mentor Program

15. Alexander Campbell (Spring 2017)

14. Kyle Tietz (Spring 2012)

13. Paul Gerver (Spring 2012)

12. David Johnston (Spring 2012)

11. Todd Wegter (Spring 2011)

10. Tanner Borglum (Spring 2011)

9. Nicolas Cabeen (Spring 2011)

8. Eric Everett (Spring 2010)

7. Michael Sambol (Spring 2010)

6. Timothy Kalpin (Spring 2010)

5. Connor Schenck (Spring 2009)

4. Scott Schroeder (Spring 2009)

3. Sakib Nazmus (Spring 2009)

2. Laura Miller (Spring 2006)

1. Austin Lyons (Spring 2006)

Mentor, Providing Experiences in Research for Undergraduate Students in Engineering (PERUSE)

1. Ritika Sahai (Spring 2009)

Informal Mentor

6. Faculty Mentor for a group of students from EE/CprE 394 (Sep. 25, 2017)

5. Faculty Mentor for a group of students from EE/CprE 294/394 (Sep. 26 & Nov. 7, 2016)

4. Faculty Mentor for a group of students from EE/CprE 394 (Oct. 5 & Nov. 2, 2015)

3. Faculty Mentor for a group of students from CprE 294 (Oct 18, 2012)

2. "Take a professor to lunch," invited by students in:
   - Engineering 101 (Oct 28, 2015)
   - Engineering 101 (Oct 7, 2015)
   - Engineering 101 (Oct 5, 2012)
   - EE/CprE 261X (Oct 28, 2011)
   - EE/CprE 261X (Sep 30, 2010)
   - Engineering 101 (Oct 29, 2009)
   - Engineering students (Oct 16, 2008)

1. Equipment purchase advice, ISU Robotics club, (Spring 2006)

Undergraduate Research Assistants

10. Connor Schenck, Tool Tracking (Summer 2010-Fall 2010)

9. Richard Gibson, Tool Tracking (Spring 2010-Fall 2010)

8. Ritika Sahai, Developmental Robotics Research (Spring 2009)

7. Matt Swanson, Weld Quality Evaluation (Fall 2007-Spring 2008)

6. Matt Miller, Weld Validation, (Summer 2006 - Summer 2007)

5. Peter Wong, Weld Validation (Summer 2006 - Spring 2007 & Spring-Summer 2008)

4. Chris Coudron, Ben Day, Chris Roder, Izaak Moody, Jacob Peterson, Joseph Bergeron, Nick Stanbrough, Noah Miranda, Robert Cook, Ted Martens, Ryan Bruce; BattleSpace (various periods between Fall 2006 and Spring 2008).

3. Mark Wiemer, Acoustic Object Recognition (Summer 2008)

2. Bradley Smith, BattleSpace (Fall 2008)

1. Steven Lischer, Robotics (Summer 2008)

Undergraduate Teaching Assistants

- CprE 281: Digital Logic
  - Fall 2017: Garrett Mayer, Gabriel Klein, Michael Ludewig, Elijah Buscho, Pierce Adajar, Benjamin Simon, Doh Yun Kim
  - Fall 2016: Garrett Mayer, Minoru Fernando, Alexander Wenning, Ryan Luckinbill, Caleb Davidson
  - Fall 2015: Matthew Mulloy, Thomas Atterbury, Thomas Scallon, Nathan Kent, Alexander Wenning, Nicholas Riesen, Jacob Drahos
  - Fall 2014: Kyle Tietz, Nate Kent, Alex Luehm, Thomas Atterbury, Matthew Mulloy, Aaron Forest
  - Spring 2014: Kyle Tietz, David Johnston, David Callen
  - Fall 2013: Kyle Tietz, David Johnston, David Callen, Martin Strobel

- HCI/CprE/ComS 575: Computational Perception
  - Spring 2017: Garrett Mayer
  - Spring 2016: Nathan Kent
  - Spring 2015: Nathan Kent
  - Spring 2013: David Johnston
  - Spring 2010: Taylor Bergquist, Connor Schenck, Ritika Sahai
  - Spring 2008: Matt Swanson
  - Spring 2007: Matt Swanson, Jace Otting

- CprE 185: Intro to Problem Solving (using C)
  - Fall 2012: Kyle Tietz, James Boddie, David Johnston, Adam Campbell, Julie Tillman
  - Fall 2011: Adam Campbell, David Loutsch, Julie Tillman, Yehoshua Meyer, Kerrick Staley
  - Fall 2010: David Loutsch, Eric Everett, Ritika Sahai, Julie Tillman, Martin Strobel, Matthew Tough
  - Fall 2009: Richard Gibson, Taylor Bergquist, Connor Schenck
  - Fall 2008: Hrishank Jhildyal, Kian Chen, Ritika Sahai, Xiang Li

- ComS 207: Programming I (in Java)
  - Fall 2007: Debra Lauterbach, Geoff Hill, Andrew Hoyt, Dustin Welch
  - Fall 2006: Kris Cory, Aaron Logan, Chris Coudron, Dustin Welch
  - Spring 2006: Thaddeus Ternes, Tim Hilby, Michael Fong, Chris Coudron

H. Other Contributions to Instructional Programs

Graduate Teaching Assistants

- CprE 281: Digital Logic
  - Fall 2017: Mohamed Selim, James Bonner, Alaa Al-Ghazo, Siyuan Lu, Seyed-Vahid Sanei-Mehri, Krishna Teja
  - Fall 2016: Alex Luehm, Minghung Shih, Siyuan Lu, Jinyuan Jia, Chan-Ching Hsu, Mohamed Selim, James Bonner
  - Fall 2015: Yu-Wen Chen, Chi-Fu Yen, Mohamed Selim, James Bonner, Rakesh Maddineni
  - Fall 2014: Byron Montgomery, John Irwin, Pratik Mishra, Yu-Wen Chen, Chan-Ching Hsu
  - Spring 2014: Benjamin Magstadt, Pratik Mishra
  - Fall 2013: Benjamin Magstadt, Pratik Mishra, Haoyuan Lin
- HCI/CprE/ComS 575: Computational Perception
  - Spring 2013: Jivko Sinapov
  - Spring 2012: Jivko Sinapov, Vladimir Sukhoy
  - Spring 2009: Shane Griffith
  - Spring 2006: Tyler Streeter
- CprE/HCI 585X: Developmental Robotics
  - Spring 2011: Jivko Sinapov
- CprE 185: Intro to Problem Solving (using C)
  - Fall 2012: Vladimir Sukhoy
  - Fall 2011: Vladimir Sukhoy, Chan-Ching Hsu
  - Fall 2009: Wade Paustian, Lu Dai, Zhengqi Zhang
  - Fall 2008: Adwait Gupte, Shane Griffith
- ComS 207: Programming I (in Java)
  - Fall 2007: Jacob Pavlovec, Faraz Hussain
  - Fall 2006: Oksana Kohutyuk, Faraz Hussain
  - Spring 2006: Ravindrudu Rahul, Chad Brewbaker
- ComS 401: Projects in Computing
  - Fall 2007: Georgi Batinov

IV. Service (Public, Professional/Disciplinary, and University)

A. Public Service

N/A

B. Service to Disciplinary and Professional Societies or Associations

65. Associate Editor, 7th Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EPIROB 2017), Instituto Superior Tecnico (IST), Lisbon, Portugal, September 18-21, 2017.

64. Reviewer, 7th Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EPIROB 2017), Instituto Superior Tecnico (IST), Lisbon, Portugal, September 18-21, 2017.

63. Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vancouver, BC, Canada, September 24-28, 2017.

62. Journal Reviewer, IEEE Transactions on Cognitive and Developmental Systems, 2017.

61. Reviewer, 6th Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EPIROB), Cergy-Pontoise/Paris, France, Sep. 19-22, 2016.

60. Associate Editor, 15th IEEE-RAS International Conference on Humanoid Robots (Humanoids 2015), Seoul, Korea, Nov. 3-5, 2015.

59. Associate Editor, 5th International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EPIROB), Providence, RI, Aug. 13-16, 2015.

58. Journal Reviewer, Journal of Field Robotics, 2015.

57. Journal Reviewer, IEEE Transactions on Autonomous Mental Development, 2015.

56. Journal Reviewer, IEEE Transactions on Robotics, 2015

55. Member, IEEE AMD Action-Perception Task Force, 2015.

54. Journal Reviewer, Autonomous Robots, 2015.

53. Reviewer, IEEE International Conference on Robotics and Automation (ICRA), Seattle, WA, May 26-30, 2015.

52. Journal Reviewer, Cognitive Systems Research, 2014.

51. Associate Editor, 4th International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EPIROB 2014), Genoa, Italy, October 13-16, 2014.

50. Reviewer, 4th International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EPIROB 2014), Genoa, Italy, October 13-16, 2014.

49. Program Committee Member, IROS 2014 Workshop "Robot Manipulation: What has been achieved and what remains to be done?" held at the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Chicago, IL, September 14, 2014.

48. Journal Reviewer, IEEE Transactions on Autonomous Mental Development, 2014.

47. Reviewer for the 2014 Haptics Symposium (HAPTICS), Houston, Texas, Feb. 23-26, 2014.

46. Reviewer, 2014 IEEE International Conference on Robotics and Automation (ICRA), Hong Kong, China, May 31-June 5, 2014.

45. Session Lead, "WS6: Lessons to be learned from biologically inspired perception," The Oxford Summit on Robotics, Pembroke College, Oxford University, UK, Sep. 18-20, 2013.

44. Session Co-Chair, "Cognitive Robotics: Developmental Perception," IEEE International Conference on Robotics and Automation (ICRA), Karlsruhe, Germany, May 9, 2013.

43. Program Committee Member, 3rd Workshop on Semantic Perception, Mapping and Exploration (SPME), Karlsruhe, Germany, May 5, 2013.

42. Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Tokyo, Japan, November 3-7, 2013.

41. Program Committee Member, 9th International Conference on Computer Vision Systems, St. Petersburg, Russia, July 16 - 18, 2013.

40. Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vilamoura, Algarve, Portugal, October 7-12, 2012.

39. Reviewer, Robotics: Science and Systems (RSS), Sydney, Australia, July 9-13, 2012.

38. Session Chair, "Grasping: Learning and Estimation," IEEE International Conference on Robotics and Automation (ICRA), Saint Paul, Minnesota, May 16, 2012.

37. Journal Reviewer, IEEE Robotics and Automation Magazine, 2011.

36. Reviewer, 11th IEEE-RAS International Conference on Humanoid Robots (Humanoids), Bled, Slovenia, October 26-28, 2011.

35. Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Francisco, CA, September 25-30, 2011.

34. Reviewer, The First International Joint Conference on Development and Learning and Epigenetic Robotics (ICDL-Epirob), Frankfurt am Main, Germany, August 24-27, 2011.

33. Journal Reviewer, IEEE Transactions on Haptics. 2011

32. Program Committee Member, 10-th International Conference on Epigenetic Robotics, Örenäs Slott, Sweden, November, 5-7, 2010.

31. Program Chair, 9-th IEEE International Conference on Development and Learning (ICDL), Ann Arbor, Michigan, August 18-21, 2010.

30. Journal Reviewer, IEEE Transactions on Systems Man and Cybernetics - C, 2010.

29. Journal Reviewer, Robotica, 2010.

28. Journal Reviewer, Autonomous Robots, 2009.

27. Reviewer, 2010 IEEE International Conference on Robotics and Automation (ICRA), Anchorage, Alaska, May 3-8, 2010.

26. Journal Reviewer, Autonomous Robots, 2009.

25. Journal Reviewer, Journal of Computing & Information Science, ASME Transactions, 2009.

24. Journal Reviewer, IEEE Transactions on Autonomous Mental Development, March 2009.

23. Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), St. Louis, USA, Oct. 11-15, 2009.

22. Journal Reviewer, Control Engineering Practice, 2009.

21. Journal Reviewer, IEEE Transactions on Autonomous Mental Development, Jan. 2009.

20. Program Committee Member, Emerging Technologies Conference, Ames, Iowa, April 2-3, 2009.

19. Publicity Chair, 8-th IEEE International Conference on Development and Learning (ICDL), Shanghai, China, June 5-7, 2009.

18. Reviewer, 2009 IEEE International Conference on Robotics and Automation (ICRA), Kobe, Japan, May 12-17, 2009.

17. Program Committee Member, 5-th International Conference on Innovations in Information Technology (Innovations'08), Al Ain, UAE, December 16-18, 2008.

16. Program Committee Member, 8th International Conference on Epigenetic Robotics, University of Sussex, Brighton, UK, 31 July - 2 August, 2008.

15. Program Committee Member, Robotics Science and Systems (RSS) Workshop on Robot Manipulation: Intelligence in Human Environments, ETH Zurich, Switzerland, June 28, 2008.

14. Reviewer, 2008 IEEE Electro-Information Technology (EIT) Conference, Ames, IA, May 18-21, 2008.

13. Reviewer, 2008 ASME Computers and Information in Engineering (CIE) Conference, New York, NY, August 3-6, 2008.

12. Reviewer, 2008 IEEE International Conference on Robotics and Automation (ICRA), Pasadena, CA, May 19-23, 2008.

11. Reviewer, 7th International Conference on Epigenetic Robotics, Rutgers University, Piscataway, NJ, November 5-7, 2007.

10. Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Diego, CA, Oct. 29- Nov 2, 2007.

9. Reviewer, 20-th International Joint Conference on Artificial Intelligence (IJCAI), Hyderabad, India, January 6-12, 2007.

8. Publicity Chair (Americas), IEEE John Vincent Atanasoff (JVA) Symposium on Modern Computing, Sofia, Bulgaria, October 3-6, 2006.

7. Session Chair, 2001 IEEE International Symposium on Computational Intelligence in Robotics and Automation (IEEE CIRA), Banff, Canada, July 29-August 1, 2001.

6. Student Volunteer, International Joint Conference on Artificial Intelligence (IJCAI), Seattle, Washington, August 4-10, 2001.

5. Student Volunteer, Humanoids 2000: First IEEE-RAS International Conference on Humanoid Robots, Boston, Massachusetts, September 7-8, 2000.

4. Student Volunteer, 5th International Symposium on Distributed Autonomous Robotic Systems (DARS), Knoxville, Tennessee, October 4-6, 2000.

3. Student Volunteer, 17-th AAAI National Conference on Artificial Intelligence (AAAI), Austin, Texas, July 30-August 3, 2000.

2. Student Volunteer, 16-th AAAI National Conference on Artificial Intelligence (AAAI), Orlando, Florida, July 18-22, 1999.

1. Student Volunteer, ACM Symposium on Interactive 3D Graphics (I3DG-99), Atlanta, Georgia, April 26-28, 1999.

C. University/Campus Service

- Member, Accreditation Committee, ECpE (2017-2018 academic year)
- Senior Project Evaluations, EE/CprE/SE 491 (Dec. 2017)
- Member, Senior Project Committee, ECpE (2016-2017 academic year)
- Member, Undergraduate Recruitment and Retention Committee, ECpE (2016-2017 academic year)
- Member, Senior Project Committee, ECpE (2015-2016 academic year)
- Member, Undergraduate Recruitment and Retention Committee, ECpE (2015-2016 academic year)
- Member, Senior Project Committee, ECpE (2014-2015 academic year)
- Member, Undergraduate Recruitment and Retention Committee, ECpE (2014-2015 academic year)
- Member, Senior Project Committee, ECpE (2013-2014 academic year)
- Member, Undergraduate Recruitment and Retention Committee, ECpE (2013-2014 academic year)
- Member, Senior Project Committee, ECpE (2012-2013 academic year)
- Member, Undergraduate Recruitment and Retention Committee, ECpE (2012-2013 academic year)
- Member, Experimental Robotics & Autonomous Aerospace Systems Search Committee, Aerospace Department, Iowa State University [the search was cancelled] (Spring 2012)
- Member, Graduate Admissions Committee, ECpE (2011-2012 academic year)
- Member, Undergraduate Recruitment & Retention Committee (2011-2012 academic year)
- Member, Graduate Admissions Committee, ECpE (2010-2011 academic year)
- Member, Peer Teaching Evaluation Committee, ECpE (Fall 2010)
- Member, Graduate Admissions Committee, ECpE (2009-2010 academic year)
- Member, Undergraduate Program Discovery/Exploration Committee (DEC) (2008-2009 academic year)
- Member, Peer Teaching Evaluation Committee, ECpE (Spring 2008)
- Member, Graduate Admissions Committee, ECpE (2008-2009 academic year)
- Project Judge, HCI graduate student technology demos, HCI Forum (Spring 2008)
- Member, Graduate Committee, ComS (2006-2007 academic year)
- Member, Undergraduate Committee, ComS (2006-2007 academic year)
- Project Judge, HCI graduate student technology demos, HCI Forum (Spring 2006)
- Project Judge, First Lego League (robot competition for high school students); Finals for the State of Iowa, Ames, Iowa, (Jan. 21, 2006)

D. Other Service

- Invited to teach programming to 5th grade students, Extended Learning Program (ELP), Edwards Elementary School, Ames, IA (Dec 19, 2017).
- Invited to teach programming to 3rd grade students, Extended Learning Program (ELP), Edwards Elementary School, Ames, IA (Oct 31 & Nov 7, 2017).
- External Thesis Examiner for a PhD Thesis submitted to the School of Computer Science and Engineering, University of New South Wales, Australia (December 2011).
- Invited book review/survey, Problem Solving and Program Design in C, by Jeri Hanly and Elliot Koffman, Pearson Education. April 2011.
- Book prospectus review, Prentice Hall - Psychology Division. September, 2008.
- Invited book review, pre-revision user review of Java Software Solutions: Foundations of Program Design (6th edition) by J. Lewis and W. Loftus, Addison Wesley. Feb 2007. Acknowledged in the 6-th edition of the book, which was published in 2009.