# *Curriculum Vitae*


## Gaurav Suhas Sukhatme

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**Biography:** Gaurav S. Sukhatme is Professor of Computer Science and Electrical and Computer Engineering at the University of Southern California (USC) and an Amazon Scholar. He holds the Fletcher Jones Foundation Endowed Chair in Computer Science at USC. Sukhatme serves as the Executive Vice Dean at the USC Viterbi School of Engineering since 2017 (on leave 2020-22). He was the Chairman of the Computer Science department from 2012-17. He received his undergraduate education at IIT Bombay in Computer Science and Engineering, and M.S. and Ph.D. degrees in Computer Science from USC. Sukhatme is the co-director of the USC Robotics Research Laboratory and the director of the USC Robotic Embedded Systems Laboratory, which he founded in 2000. His research interests are in networked robots, learning robots and field robotics. He has published extensively in these and related areas. Sukhatme has served as PI on numerous NSF, DARPA and NASA grants. He was a Co-PI on the Center for Embedded Networked Sensing (CENS), an NSF Science and Technology Center. He is a Fellow of the AAAI, the IEEE, a recipient of the NSF CAREER award, the Okawa foundation research award and an Amazon research award. He is one of the founders of the Robotics: Science and Systems conference. He was program chair of the 2008 IEEE International Conference on Robotics and Automation and the 2011 IEEE/RSJ International Conference on Robots and Systems. He is currently the Editor-in-Chief of *Autonomous Robots* (Springer Nature) and has served in the past as Associate Editor of the *IEEE Transactions on Robotics and Automation*, the *IEEE Transactions on Mobile Computing*, and on the editorial board of *IEEE Pervasive Computing*.

# Contents

# 1 Education

**Ph.D.** in Computer Science, University of Southern California, Los Angeles 1997
Dissertation: *On the Evaluation of Autonomous Mobile Robots* (Advisor: Prof. George A. Bekey)

**M.S.** in Computer Science, University of Southern California, Los Angeles 1993

**B.Tech.** in Computer Science and Engineering, Indian Institute of Technology, Bombay 1991

# 2 Professional Experience

## Academic (USC Viterbi School of Engineering)

- **Professor**, Department of Computer Science (joint appointment in ECE) Dec 97 - current
  Fletcher Jones Endowed Chair in Computer Science Aug 17 - current
  Gordon S. Marshall Chair in Engineering Jan 17 - Jul 17
  Dean's Professor Jan 15 - Dec 16
  Associate Professor Mar 05 - Jun 09
  Assistant Professor Sep 00 - Mar 05
  Research Assistant Professor Dec 97 - Aug 00
- **Research Associate**, Department of Computer Science Jun 97 - Nov 97
- **Instructor, Research and Teaching Assistant**, Department of Computer Science Sep 92 - May 97

## Industry

- **Amazon Scholar**, Amazon Alexa Aug 20 - current
- **Co-Founder**, Moving Analytics Aug 12 - current
  Board Member Aug 12 - Aug 21

## Administrative (USC Viterbi School of Engineering)

- **Executive Vice Dean** Jul 17 - current (on leave 20-22)
- **Chairman**, Department of Computer Science Jul 12 - Jun 17
- **Founder and Director**, Robotic Embedded Systems Lab Sep 00 - current
- **Co-Director**, Robotics Research Lab Sep 02 - current
  Associate Director Jan 99 - Sep 02
- **Associate Director**, Robotics and Autonomous Systems Center Aug 02 - current
  (formerly the Center for Robotics and Embedded Systems)

## Sabbaticals and Research Visits

- Center for Embedded Networked Sensing (CENS), UCLA, Los Angeles Aug 06 - May 07
- Institut für Roboterforschung (IRF), Universität Dortmund, Germany May 00 -Jul 00

# 3 Honors and Awards

1. Research (best paper nominations and awards are listed in the Publications section.)

   (a) **USC Center for Excellence in Research Faculty Fellow** 2008-2009
   Fellows selected based both on research accomplishments and on commitment to promoting a culture of excellence in research at USC. Fellows serve as leaders, advisors and mentors to fellow faculty and students both within and beyond their areas of expertise. Approximately 4 new fellowships awarded each year.

   (b) **Okawa Foundation Research Grant** 2006
   The Okawa Foundation subsidizes studies in information technology and telecommunications. Grants awarded annually to individual researchers whose work shows promise of advancing the field. Approximately 10 awards per year.

   (c) **National Science Foundation CAREER Award** 2002
   The Faculty Early Career Development (CAREER) Program is a premier program at the National Science Foundation that supports junior faculty within the context of their overall career development. Approximately 350 awards each year selected from more than than 1800 proposals.

   (d) **USC Viterbi School of Engineering Junior Faculty Research Award** 2001
   The USC Viterbi School of Engineering's recognition for excellence in research by junior faculty. The award is sponsored by Northrup-Grumann Corporation. One award per year.

   (e) **University of Dortmund Gambrinus Fellowship** 2000
   The Gambrinus Fellowship is awarded by the University of Dortmund to internationally recognized non-German scholars. It enables the fellowship holder to spend time visiting the University of Dortmund for research collaboration.

   (f) **Jet Propulsion Laboratory Research Award** 2000
   Awarded annually for excellence in research to an individual or a team. Received as part of the Tactical Mobile Robotics (TMR) team.

2. Service

   (a) **USC Mellon Mentoring Award** 2012
   USC recognizes faculty via awards in three mentoring categories. This award was in the "faculty mentoring graduate students" category. One of ten awardees.

   (b) **AAAI Outstanding Senior Program Committee Member** 2005
   In recognition of outstanding service as a Senior Program Committee member of AAAI-05.

3. Professional

   (a) **Orange County Engineering Council Outstanding Engineering Merit Award** 2020
   For "Achieving significant expertise in a particular field of engineering or science." Approximately 5-10 awards each year.

(b) **IIT Bombay Distinguished Alumnus** 2020

For *"Alumni of IIT Bombay who have distinguished themselves in their field of work and done the institute proud."* Approximately 5-10 awards each year.

(c) **AAAI Fellow** 2018

For *"Significant contributions in developing novel techniques for designing and understanding large-scale, distributed, networked robotic systems."* The Association for the Advancement of Artificial Intelligence's (AAAI) Fellows program recognizes individuals who have made significant, sustained contributions usually over at least a ten-year period to the field of artificial intelligence. 5-10 new Fellows are elected each year.

(d) **IEEE Fellow** 2010

For *"Contributions to multirobot systems."* The IEEE Grade of Fellow is conferred by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. Less than 0.1% of all IEEE members are elevated to Fellow each year.

(e) **IEEE Senior Member** 2005

Elected to senior membership. Approximately 7% of all IEEE members are senior members.

# 4 Publications

*Summary: 113 refereed journal articles, (110 published or accepted for final publication, 3 in review) 290 refereed conference papers, 4 refereed book chapters, 9 unrefereed book chapters, 5 edited journal volumes, and 4 edited books. Numerous (> 100) unrefereed publications (technical reports and papers at symposia, workshops, and other meetings) are not listed here.*

Preprints available online at http://robotics.usc.edu/resl/publications/. Paper titles below are linked to official versions on publisher sites where available.

Google Scholar reports 38560 citations and an *h*-index of 101 on November 14, 2023. Other external bibliometric sources include DBLP, arXiv, and Semantic Scholar.

## Refereed Journal Articles

113. *(submitted, in review)* Şenbaşlar, B. and Sukhatme, G.S.: DREAM: Decentralized Real-time Asynchronous Probabilistic Trajectory Planning for Collision-free Multi-Robot Navigation in Cluttered Environments, *IEEE Transactions on Robotics*

112. *(submitted, in review)* Adler, A., Mickelin, O., Ramachandran, R., Sukhatme, G.S., and Karaman, S.: The Role of Heterogeneity in Autonomous Perimeter Defense Problems, *The International Journal of Robotics Research*

111. *(submitted, in review)* Prorok, A., Malencia, M., Carlone, L., Sukhatme, G.S., Sadler, B., and Kumar. V.: Beyond Robustness: A Taxonomy of Approaches towards Resilient Multi-Robot Systems, *IEEE Transactions on Robotics (Special Issue on Resilience in Networked Robotic Systems)*

110. *(accepted, to appear)* Ramachandran, R., Fronda, N., Preiss, J., Dai, Z., and Sukhatme, G.S.: Resilient Multi-Robot Multi-Target Tracking, *IEEE Transactions on Automation Science and Engineering*

109. Gong, R., Gao, X., Gao, Q., Shakiah, S., Thattai, G., Sukhatme, G.S.: LEMMA: Learning Language- **2023**
Conditioned Multi-Robot Manipulation, *IEEE Robotics and Automation Letters*, **8**(10): 6835–6842

108. Ghosh, P., Bunton, J., Pylorof, D., Vieira, M., Chan, K., Govindan, R., Sukhatme, G.S., Tabuada, P., and Verma, G. (2023): Synthesis of Large-Scale Instant IoT Networks, *IEEE Transactions on Mobile Computing*, **23**(3): 1810–1824

107. Fernando dos Santos, R., Ramachandran., R., Vieira, M., and Sukhatme, G.S. (2023): Parallel Multi-Speed Pursuit-Evasion Game Algorithms, *Intelligent Service Robots*, **163**

106. Sutanto, G., Rombach, R., Chebotar, Y., Su, Z., Schaal, S., Sukhatme, G.S., and Meier, F. (2023): Supervised Learning and Reinforcement Learning of Feedback Models for Reactive Behaviors: Tactile Feedback Testbed, *International Journal of Robotics Research*, **41**(13–14): 1121–1145

105. Denniston, C., Rayas Fernández, I.,, Caron, D., and Sukhatme, G.S. (2022): Informative Path Plan- **2022**

ning to Estimate Quantiles for Environmental Analysis, *IEEE Robotics and Automation Letters*, **7**(4): 10280–10287

104. Gao, X., Gao, Q., Gong, R., Lin, K., Thattai, G., and Sukhatme, G.S. (2022): DialFRED: Dialogue-Enabled Agents for Embodied Instruction Following, *IEEE Robotics and Automation Letters*, **7**(4): 10049–10056

103. Denniston, C., Chang, Y., Reinke, A., Ebadi, K., Sukhatme, G.S., Carlone, L., Morrell, B., and Aghamohammadi, A. (2022): Loop Closure Prioritization for Efficient and Scalable Multi-Robot SLAM, *IEEE Robotics and Automation Letters*, **7**(4): 9651–9658

102. Salhotra, G., Liu, I.-C., Dominguez-Kuhne, M., and Sukhatme, G.S. (2022): Learning Deformable Manipulation from Expert Demonstrations, *IEEE Robotics and Automation Letters*, **7**(4): 8775–8782

101. Ramachandran, R., Pierpaoli, P., Egerstedt, M., and Sukhatme, G.S. (2022): Resilient Monitoring in Heterogeneous Multi-robot Systems through Network Reconfiguration, *IEEE Transactions on Robotics*, **38**(1): 126–138

100. Mayya S., Ramachandran, R., Zhou, L., Senthil, V.,Thakur, D., Sukhatme, G.S., and Kumar, V. (2022): Adaptive and Risk-Aware Target Tracking with Heterogeneous Robot Teams, *IEEE Robotics and Automation Letters*, **7**(2): 5615–5622

99. Ghosh, P., Liu, X., Qiu, H., Vieira, M., Sukhatme, G.S., Govindan, R. (2022): Sensing the Sensor: Estimating Camera Properties with Minimal Information, *IEEE Transactions on Sensor Networks*, **18**(2): 1–26

98. Heiden, E., Palmieri, L., Bruns, L., Arras, K., Sukhatme, G.S., Koenig, S. (2021): Bench-MR: A Motion Planning Benchmark for Wheeled Mobile Robots, *IEEE Robotics and Automation Letters*, **6**(3): 4536–45430 **2021**

97. Ramachandran, R., Fronda, N., and Sukhatme, G.S. (2021): Resilience in Multirobot Multitarget Tracking With Unknown Number of Targets Through Reconfiguration, *IEEE Transactions on Control of Network Systems*, **8**(2): 609–620

96. Christensen, H., Amato, N., Yanco, H., Mataric, M., Choset, H., Drobnis, A., Goldberg, K., Grizzle, J., Hager, G., Hollerbach, J., Hutchinson, S., Krovi, V., Lee, D., Smart, W., Trinkle, J., and Sukhatme, G.S. (2021): A Roadmap for US Robotics – From Internet to Robotics 2020 Edition, *Foundations and Trends in Robotics*, **8**(4): 307–424

95. Julian, R., Heiden, E., He, Z., Zhang, H., Schaal, S., Lim, J., Sukhatme, G.S., and Hausman, K. (2020): Scaling Simulation-to-Real Transfer by Learning a Latent Space of Robot Skills, *International Journal of Robotics Research*, **39**(10-11): 1259–1278 **2020**

94. Stauffer, B., Sukhatme, G.S., and Caron, D. (2020): Physical and Biogeochemical Factors Driving Spatially Heterogeneous Phytoplankton Blooms in Nearshore Waters of Santa Monica Bay, USA, *Estuaries and Coasts*, **43**: 909–926

93. Pflueger, M., Agha, A., and Sukhatme, G.S. (2019): Rover-IRL: Inverse Reinforcement Learning with Soft Value Iteration Networks for Planetary Rover Path Planning, *IEEE Robotics and Automation Letters (RA-L)*, **4**(2): 1387–1394 **2019**

92. Agha-mohammadi, A., Heiden, E., Hausman, K., and Sukhatme, G.S. (2019): Confidence-rich Grid Mapping, *International Journal of Robotics Research*, **38**(12-13): 1352–1374

91. Khosoussi, K., Giamou, M., Sukhatme, G.S., Huang, S., Dissanayake, G., and How, J. (2019): Reliable Graphs for SLAM, *International Journal of Robotics Research*, **38**(2-3): 260–298

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89. Abdelzaher, T., Ayanian, N., Basar, T., Diggavi, S., Diesner, J., Ganesan, D., Govindan, R., Jha, S., Lepoint, T., Marlin, B., Nahrstedt, K., Nicol, D., Rajkumar, R., Russell, S., Seshia, S., Sha, S., Shenoy, P., Srivastava, M., Sukhatme, G., Swami, A., Tabuada, P., Towsley, D., Vaidya, N. and Veeravalli V. (2018): Toward an Internet of Battlefield Things: A Resilience Perspective, *Computer,* **51**(11): 24–36 **2018**

88. Ma, K., Liu, L., Heidarsson, H., and Sukhatme, G.S. (2018): Data-Driven Learning and Planning for Environmental Sampling, *Journal of Field Robotics*, **35**(5): 643–661

87. Liu, L. and Sukhatme, G.S. (2019): A Solution to Time-Varying Markov Decision Processes, IEEE Robotics and Automation Letters (RA-L), **3**(3): 1631–1638

86. Hausman, K., Preiss, J., Sukhatme, G.S., and Weiss, S. (2018): Observability-Aware Trajectory Optimization for Self-Calibration with Application to UAVs, IEEE Robotics and Automation Letters (RA-L), **2**(3): 1770–1777

85. Hoenig, W., Preiss, J., Kumar, T.K.S., Sukhatme, G.S., and Ayanian, N. (2018): Trajectory Planning for Quadrotor Swarms, *IEEE Transactions on Robotics (Special Issue on Aerial Swarm Robotics)*, **34**(4):856–869

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83. Williams, R., Gasparri, A., Ulivi, G., and Sukhatme, G.S. (2017): Generalized Topology Control for Nonholonomic Teams with Discontinuous Interactions, *IEEE Transactions on Robotics*, **33**(4): 994–1001

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81. Subbaraya, S., Breitenmoser, A., Molchanov, A., Mueller, J., Oberg, C., Caron, D., Sukhatme, G.S. (2016): Circling the Seas: Design of Lagrangian Drifters for Ocean Monitoring, *IEEE Robotics and Automation Magazine*, **23**(4): 42–53

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79. Hollinger, G., Pereira, A., Binney, J., Somers, T., and Sukhatme, G.S. (2016): Learning Uncertainty in Predictive Ocean Models for Safe and Reliable Navigation of Underwater Vehicles, *Journal of Field Robotics*, **33**(1): 47–66

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77. Gasparri, A., Williams, R., Priolo, A., and Sukhatme, G.S. (2015): Decentralized and Parallel Constructions for Optimally Rigid Graphs in $R^2$, *IEEE Transactions on Mobile Computing*, **14**(1): 2216–2228

76. Carboni, D., Williams, R., Gasparri, A., Ulivi, G., and Sukhatme, G.S. (2015): Rigidity-Preserving Team Partitions in Multiagent Networks, *IEEE Transactions on Cybernetics*, **45**(12): 2640–2653

75. Hollinger, G., Yerramalli, S., Singh, S., Mitra, U. and Sukhatme, G. S. (2015): Distributed Data Fusion for Multirobot Search, *IEEE Transactions on Robotics*, **31**(1): 55–66

74. Gupta, M. and Sukhatme, G.S. (2015): Using Manipulation Primitives for Object Sorting in Cluttered Environments, *IEEE Transactions on Automation Science and Engineering*, **12**(2): 608–614

73. Williams, R., Gasparri, A., Priolo, A., and Sukhatme, G.S. (2015): Evaluating Network Rigidity in Realistic Systems: Decentralization, Asynchronicity, and Parallelization, *IEEE Transactions on Robotics*, **30**(4): 950–965

72. Mitra, U., Choudhary, S., Hover, F., Hummel, R., Kumar, N., Narayanan, S., Stojanovic, M., and Sukhatme, G. S. (2015): Structured Sparse Methods for Active Ocean Observation Systems with Communication Constraints, *IEEE Communications Magazine (Special Issue on Underwater Wireless Communications and Networks: Theory and Application)*, **53**(11): 88–96

71. Das, J., Py, F., Harvey, J., Ryan, J., Galleon, A., Graham, R., Caron, D., Rajan, K. and Sukhatme, G. S. (2015): Data-driven Robotic Sampling for Marine Ecosystem Monitoring, *International Journal of Robotics Research*, **34**(12): 1435–1452

70. Bhattacharya, S., Kim, S., Heidarsson, H., Sukhatme, G.S., and Kumar, V. (2015), A Topological Approach to Using Cables to Separate and Manipulate Sets of Objects, *International Journal of Robotics Research*, **34**(6): 799–815

69. Hollinger, G. and Sukhatme, G. S. (2014): Sampling-based Robotic Information Gathering Algorithms, *International Journal of Robotics Research*, **33**(9): 1271–1287 **2014**

68. Kelly, J., Roy, N. and Sukhatme, G.S. (2014): Determining the Time Delay Between Inertial and Visual Sensor Measurements, *IEEE Transactions on Robotics*, **30**(6): 1514–1523

67. Vathsangam, H., Schroeder, T., and Sukhatme, G.S. (2014): Hierarchical Approaches to Estimate Energy Expenditure using Phone-Based Accelerometers, *IEEE Journal of Biomedical and Health Informatics*, **18**(4): 1242–1252

66. Righetti, R., Kalakrishnan, M., Pastor, P., Binney, J., Kelly, J., Voorhies, R., Sukhatme, G.S., and Schaal, S. (2014): An Autonomous Manipulation System Based on Force Control and Optimization, *Autonomous Robots*, **36**(1):11-30

65. Williams, R. and Sukhatme, G.S. (2013): Constrained Interaction and Coordination in Proximity-Limited Multiagent Systems, *IEEE Transactions on Robotics*, **29**(4): 930–944 **2013**

64. Potthast, C. and Sukhatme, G. S. (2013): A Probabilistic Framework for Next Best View Estimation in a Cluttered Environment, *Journal of Visual Communication and Image Representation (JVCI), (Special Issue on Visual Understanding and Applications with RGB-D Cameras)*, **25**(1): 148–164

63. Pereira, A., Hollinger, G., Binney, J., and Sukhatme, G.S. (2013): Risk-aware Path Planning for Autonomous Underwater Vehicles using Predictive Ocean Models, *Journal of Field Robotics*, **30**(5): 741–762

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61. Hollinger, G., Englot, B., Hover, F., Mitra, U., and Sukhatme, G. S. (2013): Active Planning for Underwater Inspection and the Benefit of Adaptivity, *International Journal of Robotics Research*, **32**(1).

60. Stauffer, B., Schnetzer, A., Gellene, A., Oberg, C., Sukhatme, G. S., and Caron, D. (2013): Effects of an Acute Hypoxic Event on Microplankton Community Structure in a Coastal Harbor of Southern California, *Estuaries and Coasts*, **36**:135–148

59. Jahanshahi, M., Masri, S., Padgett, C., and Sukhatme, G.S. (2013): An Innovative Methodology for Detection and Quantification of Cracks through Incorporation of Depth Perception, *Machine Vision and Applications*, **24**(2): 227-241

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56. Vathsangam, H., Emken, A., Schroeder, T., Spruijt-Metz, D., and Sukhatme, G.S. (2012): Hierarchical Linear Models for Energy Prediction using Inertial Sensors: A Comparative Study for Treadmill Walking, *Journal of Ambient Intelligence and Humanized Computing on Pervasive Health*, **4**(6):747–758

55. Stauffer, B., Gellene, A., Schnetzer, A., Seubert, E., Oberg, C., Sukhatme, G. S., and Caron, D. (2012): An Oceanographic, Meteorological and Biological 'Perfect Storm' Yields a Massive Fish Kill, *Marine Ecology – Progress Series*, **468**:231–243

54. Hollinger, G., Choudhary, S., Qarabaqi, P., Murphy, C., Mitra, U., Sukhatme, G.S., Stojanovic, M., Singh, H., and Hover, F. (2012): Underwater Data Collection Using Robotic Sensor Networks, *IEEE Journal on Selected Areas in Communications (Special Issue on Communications Challenges and Dynamics for Unmanned Autonomous Vehicles)*, **30**(5): 899–911

53. Das, J., Py, F., Maughan, T., O'Reilly, T., Messie, M., Ryan, J., Sukhatme, G.S., and Rajan, K. (2012): Coordinated Sampling of Dynamic Oceanographic Features with Underwater Vehicles and Drifters, *International Journal of Robotics Research (Special Issue on the Twelfth International Symposium on Experimental Robotics)*, **31**(5): 626–646

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50. Arrichiello, F., Heidarsson, H., Chiaverini, S., and Sukhatme, G.S. (2012): Cooperative Caging and Transport using Autonomous Aquatic Surface Vehicles, *Intelligent Service Robotics*, **5**(1): 73–87

**2011**

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**2010**

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*Fully refereed papers in the proceedings of major conferences.*

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289. Tang, B., Lin, M., Akinola, I., Handa, A., Sukhatme, G.S., Ramos, F., and Fox, D.: (2023) IndustReal: Transferring Contact-Rich Assembly Tasks from Simulation to Reality, Robotics: Science and Systems (RSS), 2023

288. Hegde, S. and Sukhatme, G.S. (2023): Efficiently Learning Small Policies for Locomotion and Manipulation, IEEE International Conference on Robotics and Automation (ICRA), May 2023

287. Denniston, C., Peltzer, O., Ott, J., Moon, S., Kim, S., Sukhatme, G.S., Kochenderfer, M., Schwager, M., Agha-mohammadi, A. (2023): Fast and Scalable Signal Inference for Active Robotic Source Seeking, IEEE International Conference on Robotics and Automation (ICRA), May 2023

286. Tang, B. and Sukhatme, G.S. (2022): Selective Object Rearrangement in Clutter, Conference on Robot Learning (CoRL)

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284. Jia, Z., Lin, K., Zhao, Y., Gao, Q., Thattai, G., and Sukhatme, G.S. (2022): Learning to Act with Affordance-Aware Multimodal Neural SLAM, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 2022

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7. Dahl, T.S., Matarić, M.J., and Sukhatme, G.S. (2006): A machine learning method for improving task allocation in distributed multi-robot transportation, in *Complex Engineering Systems*, Dan Braha, Ali Minai, and Yaneer Bar-Yam (eds.), Perseus Books

6. Kaiser, W.J., Pottie, G.J., Srivastava, M., Villasenor, J., Sukhatme, G.S., and Estrin, D. (2006): Networked Infomechanical Systems (NIMS) for Ambient Intelligence, in *Ambient Intelligence*, J. Rabaey and W. Weber (eds.), pp. 83–114

5. Sukhatme, G.S. (2005): Sensor Coordinated Actuation, in *Wireless Sensor Networks: A Systems Perspective*, eds. N. Bulusu and S. Jha, Artech House

4. Sukhatme G.S., Montgomery, J.F. and Vaughan, R.T. (2002): Experiments with Cooperative Aerial-Ground Robots, in *Robot Teams: From Diversity to Polymorphism* eds. T. Balch and L. E. Parker

3. Hespanha, J.P., Sukhatme G.S. and McLaughlin, M. (2002): Introduction to Haptics, in *Touch in Virtual Environments: Haptics and the Design of Interactive Systems* eds. M. McLaughlin, J.P. Hespanha and G.S. Sukhatme, Prentice-Hall, pp. 1–31

2. Hespanha, J.P., Sukhatme G.S. and McLaughlin, M. (2002): Haptic Collaboration over the Internet, in *Touch in Virtual Environments: Haptics and the Design of Interactive Systems* eds. M. McLaughlin, J.P. Hespanha and G.S. Sukhatme, Prentice-Hall, pp. 158–168

1. Iberall T., Sukhatme G.S., Beattie D. and Bekey G. A.(1995): Control Philosophy and Simulation of a Robotic Hand as a Model for Prosthetic Hands, in *Intelligent Control Systems: Theory and Applications* eds. M. Gupta and N. Sinha, IEEE Press, pp. 682–701

## Edited Books

4. The Path to Autonomous Robots, Springer, 2008

3. Robotics Science and Systems II, MIT Press, 2007 (with W. Burgard, D. Fox and S. Schaal)

2. Robotics Science and Systems I, MIT Press, 2005 (with S. Thrun, O. Brock, and S. Schaal)

1. Touch in Virtual Environments: Haptics and the Design of Interactive Systems, Prentice-Hall, 2002. (with M. McLaughlin and J.P. Hespanha)

## Edited Journal Volumes

5. Guest Editor (with O. Brock, S. Koenig, and N. Roy), *International Journal of Robotics Research, Special Issue on Robotics: Science and Systems 2005*, **25**(12), December 2006

4. Guest Editor (with D. Estrin), *IEEE Pervasive Computing, Special Issue on Sensor and Actuator Networks*, **2**(4), October-December 2003

3. Guest Editor, *Autonomous Robots, Special Issue on Intelligent Embedded Systems*, **13**(2), September 2002

2. Guest Editor (with M. Matarić), *Communications of the ACM, Special issue on 'Robots: Intelligence, Versatility, Adaptivity'*, March 2002

1. Guest Editor, *Robotics and Autonomous Systems, Special Issue on Intelligent Embodied Autonomous Agents*, **29**(2-3), November 1999

## White Paper

1. Goldman, J., Ramanathan, N., Ambrose, R., Caron, D., Estrin, D., Fisher, J., Gilbert, R., Hansen, M., Harmon, T., Jay, J., Kaiser, W., Sukhatme, G. S, and Tai, Y. (2007) Distributed Sensing Systems for Water Quality Assessment and Management, *Woodrow Wilson International Center for Scholars (Foresight and Governance Project) and the Center for Embedded Networked Sensing*, February 2007

# 5 Invited Talks

47. Big Data and Small Models: Lessons for Robotics
    Robotics Institute Seminar, University of Toronto 4/29/23

46. Decentralized Control of Quadrotor Swarms with End-to-end Deep Reinforcement Learning
    EECS Seminar, UC Irvine 12/3/21

45. Robot Planning for Underwater Sensing and Sampling
    Environmental Science and Engineering Seminar, Caltech 3/7/18

44. Robots at Sea
    Robotics Seminar, MIT, 11/28/17
    MEMS Seminar, Duke University, 11/29/17

43. Project Sophia
    First Aslla Symposium (Future of Artificial Intelligence and Robotics), KIST, Gangneung, 5/30/17

42. Digitizing the Hydrosphere: Challenges in Underwater Drone Autonomy
    Distinguished Colloquium, ECE Department, UC Riverside, 5/22/17
    Keynote Talk, Canadian Robotics Vision Conference, 5/18/17

41. Robots at Sea: Decision Making in Uncertain Environments
    Mechanical Engineering Seminar, IIT Bombay, 1/3/17

40. Sampling the Ocean: Adventures in Constrained Decision-making
    Robotics Seminar, OSU, 5/6/16
    Southern California Robotics Symposium, UCSD, 4/22/16
    Robotics Institute Seminar, CMU, 4/8/16
    Controls Seminar, University of Michigan, 1/5/16
    Controls Seminar, UCSB 12/4/15
    Graduate Seminar, Purdue University, School of Mechanical Engineering 11/19/15
    Colloquium, UC Irvine, Department of Mechanical and Aerospace Engineering 10/2/15
    Distinguished Lecture in Robotics, ETH Zurich 9/18/15
    IST Lunch Bunch, Caltech 5/19/15
    Computer Science Department Distinguished Lecture, SUNY Buffalo 4/9/15
    Autonomous Motion Department Seminar, Max Planck Institute for Intelligent Systems 3/19/15
    Robotics and Biology Lab Seminar, TU Berlin 3/17/15

39. Persistent Autonomy at Sea
    Colloquium, Johns Hopkins University, Department of Mechanical Engineering 3/27/14
    Robotics Seminar, University of Washington, Department of Computer Science 2/8/13

38. Planning and Decision-making for Underwater Robot Teams: Algorithms and Experiments
    JPL Seminar, Jet Propulsion Laboratory, Pasadena, CA 10/28/11

37. Planning for Effective Underwater Sensing: Algorithms and Experiments
    Robotics Seminar, University of Maryland, College Park 10/21/11

36. Planning and Decision-making for Underwater Robot Teams: Algorithms and Experiments
    Google, Mountain View 6/6/11

35. Monitoring the Coastal Ocean using Underwater Robots: Algorithms and Experiments
    National Institute of Oceanography (NIO), Goa, India 12/14/10

34. Monitoring the Coastal Ocean using Underwater Networked Robots: Algorithms and Experiments
    DARS2010 and Environmental Engineering Seminar Series invited talk at EPFL 11/3/10

33. Exploring the Coastal Ocean using Underwater Robots
    Colloquium, IT University of Copenhagen, Copenhagen 1/28/10
    Seminar, Center for Control Systems and Dynamics, UCSD 2/19/10

32. 50 Years of Underwater Robotics: Exploring the Coastal Ocean using Underwater Robots
    Celebrating 50 Years Of Robotics: Symposium and Poster Session, University of Pennsylvania 12/11/09

31. Adaptive Sampling Methods for Robotic Observing Systems
    Annual research day, EPFL 4/30/09
    Monterey Bay Aquarium Research Institute (MBARI) 1/21/09

30. Networked Robots: An Ecological Macroscope in the Making
    Applied Minds, Inc. 10/24/08
    MTNS, Virgina Institute of Technology 7/31/08
    RIM Colloquium, Georgia Institute of Technology 1/30/08

29. Towards a Networked Robotic Observatory
    Autonomy Laboratory, Simon Fraser University 7/6//06
    CCNY Lecture Series on Vision, Robotics and HCI, CCNY 3/15/06
    Netted Sensors Workshop, MITRE 10/24/05

28. Robotics at USC: Exploring, Learning, and Helping
    USC 125th and Viterbi School of Engineering 100th celebration 10/6/05

27. Networked Robotic Observatories for the Biosciences
    Plenary talk, IROS 2005 8/5/05

26. Controlling Sensor Network Deployment for Coverage and Connectivity
    Workshop on Swarming in Natural and Engineered Systems, Napa Valley, California 8/3/05

25. Distributed Robotics and Sensor-Actuator Networks
    Cooperative Robotics Workshop, IEEE ICRA 2005 4/22/05

24. Networked Robotics: From Distributed Robots to Sensor Networks
    - The IEEE Orange County Computer Society 6/28/04
    - Robotics Institute Seminar, Carnegie Mellon University 4/9/04
    - Robotics Seminar, Georgia Institute of Technology 4/8/04
    - Robotics and Control Colloquium, University of Washington 3/12/04
    - Computer Science Department, Simon Fraser University 3/11/04
    - Robotics Laboratory Seminar, Stanford University 3/1/04
    - GRASP Laboratory Seminar, University of Pennsylvania 1/30/04

23. Aerial and Ground Robots
    - GATO Workshop, Naval Research Laboratory 2/19/04

22. The Player/Stage/Gazebo Project
    - DARPA Workshop on Navigation, Locomotion, and Articulation, Washington DC 11/11/03

21. Actuation and Sensor Networks
    - NSF-ECS Wireless Networked Sensor Systems Workshop, UCLA, Los Angeles 9/9/03

20. Networked Robotics
    - Second Intel XScale Platform Workshop and Robotics Forum, Portland 1/23/03
    - Computer Science Department Seminar, Dartmouth College 2/3/03

19. Adding Actuation to Sensor Networks
    - IEEE Circuits & Systems, Workshop on Wireless Communications & Networking, Pasadena 9/6/02
    - Hewlett-Packard Research Labs Seminar, Palo Alto 8/16/02

18. Physics-based Sensing and State Estimation Algorithms for Robotic Sensor Networks
    - Institute for Pure and Applied Mathematics (UCLA),
    - Workshop on Massively Distributed Self-Organizing Networks, Los Angeles 5/17/02

17. What Can Robotics Do for Sensor Networks ?
    - $1^{st}$ Annual Symposium on Autonomous Intelligent Networks & Systems, Los Angeles 5/9/02

16. Sensor Coordinated Actuation
    - UCLA Computer Science Department Annual Research Review, Los Angeles 4/26/02

15. Robotic Sensor Networks
    - EECS Department SensorWebs seminar, UC Berkeley 3/13/02
    - First Intel XScale Platform Workshop and Robotics Forum, Portland 1/23/02
    - UC Berkeley NEST Retreat, Lake Tahoe 1/16/02

14. Embedding the Internet
    - NASA/NSF Workshop on Mobile Terrestrial & Space Networking 6/26/01

13. Large-scale Distributed Robotics
    - Computer Science Department Colloquium, UMass Amherst 4/27/01

12. The USC Autonomous Flying Vehicle Project
    Lab for Perceptual Robotics Seminar, UMass Amherst 4/27/01

11. Robots at Work
    Computer Science Department Colloquium, UCLA 2/1/01

10. Biologically-Inspired Control Strategies for Wireless Robots
    NSF Networking PI meeting, UC Irvine 11/3/00

9. Measuring Mobile Robot Performance: Approaches and Pitfalls
    Performance Metrics for Intelligent Systems Workshop, NIST 8/15/00

8. Aerial Unmanned Rotorcraft: Control and Coordination
    Institute of Robotics Research Colloquium, University of Dortmund, Germany 6/19/00

7. A Match Made in Heaven: Metric Localization and Topological Mapping
    Broad Area Colloquium, Stanford University 5/17/00

6. Localization and Mapping in Mobile Robots
    SRI International, Menlo Park 11/29/99

5. Smoother-Based 3D Localization of Mobile Robots
    Robotics Lab Seminar, Stanford University 2/9/99
    Robotics Institute Seminar, Carnegie Mellon University 1/27/99
    Indian Institute of Technology, Bombay, India 12/27/98

4. Evaluating Robot Design and Physics Based Simulation
    Boeing Research and Technology, Seattle 8/14/97

3. Evaluation of Mobile Robots
    Bhabha Atomic Research Center, Bombay, India 6/21/95
    Indian Institute of Technology, Bombay, India 6/22/95

2. Comparative Evaluation of Walking and Legged Robots in a Simulated Mars Environment
    Los Angeles Robotics & Automation Symposium, UCLA 4/28/95

1. Projects in Robotics
    Indian Institute of Technology, Bombay, India 7/20/93

# 6 Grants and Contracts

*Summary: 3 active grants and contracts (all as sole USC PI) on which Sukhatme share is approximately $0.5M. 40+ grants and contracts are complete on which Sukhatme share exceeds $30M. Grant sources (federal): NSF, DARPA, ONR, NASA and NOAA. Grant sources (industry): Amazon, Intel, AeroVironment, Aginova.*

## Active Grants and Contracts

1. Amazon: Learning from Interruption: How to Efficiently and Automatically Improve Deployed Systems PI: Sukhatme
   Amount: $80,000, Duration: 8/20-

2. Amazon: Watch, Practice, Learn, Do: Unsupervised Learning of Robust and Composable Robot Motion Skills by Fusing Expert Demonstrations with Robot Experience
   PI: Sukhatme
   Amount: $80,000, Duration: 2/19-

3. ARL: ARCHES: Autonomous Resilient Cognitive Heterogeneous Swarms (DCIST)
   PI: Sukhatme, CoPI: Ayanian
   Amount: $378,208.92 (Sukhatme share, Y1-2), Duration: 9/17-

## Completed Grants and Contracts

1. ARL: Alliance for IOBT Research on Evolving Intelligent Goal-Driven Networks (IoBT Reign)
   PI: Govindan, CoPIs: Ayanian, Sukhatme
   Amount: $649,565.39 (Sukhatme share, Y1-3), Duration: 9/17-

2. ONR: Active Communication, Sensing, and Control in Actuated Underwater Sensing Networks
   PI: Mitra, CoPI: Sukhatme
   Amount: $621,185, Duration: 9/15-8/20

3. : USDA: Adaptive Water Quality Sampling with Autonomous Vehicles with Applications to Nitrate Deposition
   PI: Sukhatme
   Amount: $222,716, Duration: 2/17-2/20

4. ONR: DURIP: Acquisition of a Motion Capture System for DoD-Sponsored Research in Robotics, Communication and Sensing
   PI: Sukhatme, CoPIs: Ayanian, Moghaddam, Savla
   Amount: $209,000

5. NSF: REU SITE: Robotics and Autonomous Systems
   PI: Ayanian, CoPI: Sukhatme
   Amount: $333,627 (Total), Duration: 4/17-3/20

6. NSF: RI: Small: Decision Making with Spatially and Temporally Uncertain Data
   PI: Sukhatme
   Amount: $449,889, Duration: 8/16 - 7/19

7. Okawa Foundation: Networked Robots and Robotic Sensor Networks
   PI: Sukhatme
   Amount: $10,000, Duration: 9/06 - present

8. ONR: Persistent Autonomy at Sea
   PI: Sukhatme
   Amount: $870,000, Duration: 6/14 - 6/17

9. NSF: I-Corps: MeasureMe: Smart, Accurate, Social Behavior Monitoring
   PI: Sukhatme
   Amount: $50,000, Duration: 6/13 - 12/14

10. NOAA: A Regional Comparison of Upwelling and Coastal Land Use Patterns on the Development of HAB Hotspots Along the California Coast
    PI: Kudela, CoPIs: Caron, Jones, Sukhatme and others
    Amount: $4,076,929, Duration: 11/11 - 10/16

11. NSF: CDI-Type I: Collaborative Research: Collaborative Multi-Robot Exploration of the Coastal Ocean
    PI: Sukhatme, CoPIs: Dolan, Rajan
    Amount: $725,000, Duration: 8/11 - 8/15

12. NSF: CPS: Medium: Collaborative Research: Dynamic Routing and Robotic Coordination for Oceanographic Adaptive Sampling
    PI: Bullo, CoPIs: Suri, Sukhatme
    Amount: $345,000, Duration: 10/10 - 9/14

13. DARPA: Adaption and Learning in Autonomous Robot Manipulation
    PI: Schaal, Co-PI: Sukhatme
    Amount: $1,116,334, Duration: 7/10 - 9/14

14. NSF: RI: Small: Vision-Based Mobile Manipulation and Navigation
    PI: Sukhatme, Co-PI: Schaal
    Amount: $449,271, Duration: 8/10 - 7/15

15. ONR: (MURI) ANTIDOTE: Adaptive Networks for Threat and Intrusion Detection or Termination
    PI: Sukhatme, Co-PIs: Matarić and Koenig
    Amount: $3,000,000, Duration: 6/09 - 5/15 (This is the USC share of $7.5M from ONR to the MURI overall)

16. ONR: Intelligent Coordination and Adaptive Classification for Naval Autonomous Systems
    PI: Mitra, Co-PIs: Narayanan and Sukhatme

Amount: $3,950,000, Duration: 8/09 - 7/15 (This is the USC share of $3.95M from ONR to the project overall)

17. ONR: (MURI) Modular Social Intelligence for Teaming and Coalition Adaptation of Heterogeneous Autonomous Cooperative Agents (ACAs)
    PI: Sukhatme
    Amount: $1,175,419, Duration: 5/08-4/14 (This is the USC share of $6M from ONR to the MURI overall)

18. NSF: MRI$^2$: Acquisition of a Networked AUV-based Instrument for the Southern California Bight
    PI: Sukhatme, Co-PIs: Caron, Heidemann, Edwards, Jones, Mitra, and Shen Amount: $400,000, Duration: 5/10 - 4/13

19. NSF: Design-Level Reliability Evaluation of Software-Intensive Systems: A Compositional and Hierarchical Approach
    PI: Medvidovic, Co-PIs: Golubchik and Sukhatme

20. NSF: (STC) Center for Embedded Networked Sensing
    PI: Sukhatme, Co-PIs: Caron and Govindan
    Amount: $4,000,000, Duration: 8/07-7/12 (this is the USC share of $20M from NSF to the Center overall)

21. NSF: REU Site: Coordination, Communication, Autonomy: Principles and Technologies
    PI: Sukhatme, Co-PI: Golubchik
    Amount: $310,000, Duration: 3/08 - 3/12

22. NSF: Acquisition of An Assistive Humanoid Robot Platform for a Human Centered Robotics Laboratory
    PI: Schaal, Co-PIs: Itti, Matarić, Sukhatme
    Amount: $500,000, Duration: 9/06 - 8/11

23. NOAA: MERHAB-RAPDALERT: Rapid Analysis of Pseudo-nitschia and Demoic Acid, Locating Events in near-Real Time PI: Caron, co-PIs: Jones, Sukhatme
    Amount: $1,766,000, Duration: 9/05-8/10

24. DDDAS-TMRP: A Generic Multi-scale Modeling Framework for Reactive Observing Systems
    PI: Golubchik, Co-PIs: Caron, Govindan, Kempe, Sukhatme
    Amount: $950,000, Duration: 1/05 - 12/10

25. Mobile Device Biomonitoring to Prevent and Treat Obesity in Underserved Minority Youth
    PI: Spruit-Metz, Co-PIs: Narayanan, Annavaram, Mitra and Sukhatme
    Amount: $472,522, Duration: 09/08-08/10

26. NASA/JPL: Reconfigurable Robotic Software for Recovering from Failures in Long Life-Cycle Mission
    PI: Sukhatme, Co-PI: Medvidovic
    Amount: $75,000, Duration: 9/09-5/10

27. NSF: ITR: Structural Health Monitoring Using Local Excitation and Large-Scale Networked Sensing
    PI: Govindan, co-PIs: Krishnamachari, Masri, Johnson, and Sukhatme
    Amount: $2,600,000, Duration: 9/03 - 8/09

28. NSF: ITR: Networked Infomechanical Systems (NIMS) (This is the USC share of $3M from NSF to the ITR overall)
    PI: Sukhatme
    Amount: $500,000, Duration: 10/03 - 9/09

29. NSF: Workshop on Human-Robot Interaction (HRI)
    PI: Matarić, Co-PIs: Schaal, Sukhatme
    Amount: $49,995, Duration: 8/06 - 7/08

30. NSF: NeTS-NOSS: Mobility-Assisted Network Deployment and Maintenance
    PI: Sukhatme, Co-PIs: Estrin, Potonjak, Rus
    Amount: $500,000, Duration: 9/05 - 8/08

31. NSF: CAREER: Multi-scale Modeling for Mobile, Multi-robot Systems
    PI: Sukhatme
    Amount: $350,000, Duration: 3/02 - 2/08

32. NSF: CSR-SMA: Engineering Reliability Into Hybrid Systems via Rich Design Models
    PI: Medvidovic, Co-PIs: Golubchik, Sukhatme
    Amount: $100,000, Duration: 7/05 - 6/07

33. NSF: Center for Embedded Networked Sensing (STC subcontract to USC from UCLA)
    PI: Sukhatme, Co-PIs: Caron and Govindan
    Amount: $4,000,000, Duration: 8/02-7/07

34. JPL: Improving Stereo Resolution with Filtering
    PI: Sukhatme
    Amount: $71,346, Duration: 3/05 - 5/07

35. JPL: Towards a New Generation of Spacecraft Landing Testbeds
    PI: Sukhatme
    Amount: $18,458, Duration: 7/05 - 12/06

36. Applied Perception: SegMule: A Segway-based Mule Robot
    PI: Sukhatme
    Amount: $110,000, Duration: 1/05 - 2/06

37. NSF: ITR: Active Sensor Networks with Applications to Marine Microorganism Monitoring
    PI: Requicha, co-PIs: Caron, Estrin, Matarić and Sukhatme
    Amount: $1,500,000, Duration: 9/01 - 08/04

38. AeroVironment: State Estimation for an MAV
    PI: Sukhatme
    Amount: $30,000, Duration: 7/04 - 8/05

39. DOE: Multi-Robot Learning in Tightly-Coupled, Inherently Cooperative Tasks
    PI: Matarić, co-PI: Sukhatme
    Amount: $600,000, Duration: 8/01 - 06/05

40. DARPA (via UPenn): Heterogeneous Small-Team Behaviors for Mobile Robots in Outdoor Environments
    PI: Sukhatme, Co-PI: Matarić
    Amount: $1,120,000, Duration: 9/02 - 12/04

41. Aginova: Sensor-Actuator Networks for Pipe Inspection
    PI: Sukhatme
    Amount: $5,000, Duration: 7/04 - 12/04

42. NSF: Dynamic Adaptive Wireless Networks with Autonomous Robot Nodes
    PI: Sukhatme, Co-PIs: Estrin, Matarić, Govindan and Heidemann
    Amount: $900,000.00, Duration: 9/00 - 9/04

43. DARPA: A Software Framework for Reliable, Adaptive, Autonomous Robots in Dynamic Unstructured Environments
    PI: Sukhatme, Co-PIs: Bekey and Matarić
    Amount: $2,157,001.00, Duration: 7/99 - 8/04

44. DARPA (via SAIC): Software for Distributed Robotics
    PI: Sukhatme, Co-PIs: Matarić and Tambe
    Amount: $400,000, Duration: 7/02 - 2/04

45. NASA/JPL: Autonomous Vision Guided Safe and Precise Landing
    PI: Sukhatme
    Amount: $160,000, Duration: 6/01 - 01/04

46. Intel Corporation: Support for Robotics Education
    PI: Sukhatme
    Amount: $40,000, Duration: 9/02 - 8/03

47. ONR: Equipment Support for Dynamic Adaptive Wireless Networks with Autonomous Robot Nodes
    PI: Estrin, Co-PIs: Matarić and Sukhatme
    Amount: $320,388.00, Duration: 3/00 - 3/03

48. DARPA: Robot-Agent-Person Teams
    PI: Tambe, Co-PI: Sukhatme
    Amount: $50,000, Duration: 7/02 - 3/03

49. Intel Corporation: Graduate Embedded Systems Laboratory
    PI: Sukhatme, Co-PI: Medvidovic
    Amount: $75,000, Duration: 9/01 - 8/03

50. NSF: Dynamic Adaptive Wireless Networks with Autonomous Robot Nodes
    PI: Estrin, Co-PIs: Bekey, Matarić, Govindan and Sukhatme
    Amount: $480,000.00, Duration: 9/99 - 9/01

51. SPAWAR: Autonomous Mobile RF Relays
    PI: Sukhatme
    Amount: $19,540.00, Duration: 6/01 - 8/01

52. NASA: Design and Implementation of a User Interface for a Robot Pointman
    PI: Bekey, Co-PI: Sukhatme
    Amount: $495,824.00, Duration: 8/98 - 8/00

53. DARPA: A Robust Tactical Mobile Robot System with Distributed Intelligence
    PI: Bekey, Co-PIs: Matarić and Sukhatme
    Amount: $750,000.00, Duration: 6/98 - 6/00

# 7 Teaching and Supervision of Students and Postdocs

## Classroom

*Summary: I have taught 5 separate graduate classes (several more than once) in robotics and embedded systems, 3 of which I designed and developed at USC. I have also taught 1 (large) class in introductory computer science for freshmen on multiple occasions which I co-developed and 1 class on teaching methods and pedagogy to PhD students (multiple times) which I developed. Two classes I designed by (denoted by †) were supported by two external equipment grants and a gift from Intel Corporation. The italicized number in brackets after each class year is the student evaluation score which rates my teaching ("Overall, how would you rate this instructor?") on a scale of 1.00 (poor) to 5.00 (excellent).*

1. CS 109: Introduction to Computer Science
   Fall 2016 *3.92*, Spring 2017
   An introductory freshman level survey of computer science.

2. CS 698: Practicum in Teaching Computer Science
   Fall 2015, Spring 2016 *4.23*, Fall 2016 *4.65*, Spring 2017, Fall 2017 *4.51*, Spring 2018
   Teaching Computer Science PhD students how to be effective teaching assistants and TAs.

3. CS 109: Introduction to Computing
   Fall 2013 (co-taught with P. Rosenbloom) *4.1*, Spring 2014 *4.1*, Spring 2015 *4.12*, Spring 2016 *3.92*
   An introductory freshman class on computing as a new scientific domain, and a survey of computer science.

4. CS 599: Sequential Decision Making in Robotics
   Spring 2011 (co-taught with G. Hollinger) *(4.43)*
   An advanced graduate seminar on algorithms for sequential decision making problems in robotics.

5. † CS 547: Sensing and Planning in Robotics
   Fall 2011 *4.32*, Fall 2010 *(4.52)*, Fall 2009 *(4.44)*, Fall 2008 *(4.63)*, Fall 2005 *(4.33)*, Fall 2004 *(4.69)*, Fall 2003 *(4.67)*, Fall 2002 *(4.61)*, Fall 2000 *(4.33)*, Fall 1999 *(4.91)*, and Fall 1998 *(4.92)* (as EE/CS 547: Software Methods in Robotics)
   The class introduced students to sensing and planning techniques in mobile robotics. In 1998 the class material had become outdated; I completely revamped it with a new syllabus and an emphasis on the mathematical principles underlying the treatment of uncertainty in modern robotics. A new set of readings and a new title accompanied the change. The class was supported by an Intel-sponsored laboratory grant.

6. † CS 546: Intelligent Embedded Systems
   Spring 2011 *(4.44)*, Spring 2009 *(4.18)*, Spring 2006 *(4.43)*, Spring 2003 *(4.27)*, Spring 2002 *(4.32)* (as CS 599: Intelligent Embedded Systems ), Spring 2001 *(4.52)* (as CS 599: Intelligent Embedded Systems)
   This seminar-style class introduced students to algorithms and programming techniques for distributed, embedded systems. It was supported by an Intel-sponsored laboratory grant.

7. CS 445: Robotics
   Spring 2005 *(4.20)*, Spring 2004 *(4.19)*, Fall 2001 *(4.38)*
   An undergraduate introduction to robotics with an accompanying LEGO-based lab.

8. EE/CS 545 - Introduction to Robotics
   Spring 1996 *(4.29)*
   The class introduced students to basic kinematics, dynamics and control for robot manipulators. The focus was on understanding classical techniques in manipulator modeling and control.

## Graduated Ph.D. Students

*This is the list of students for whom I was advisor of record at the time of their graduation.*

*Notes: Baskın Şenbaşlar was solely advised by Nora Ayanian till 2021, and Yevgen Chebotar and Giovanni Sutanto were solely advised by Prof. Stefan Schaal till 2018. Mohammad Rahimi was co-advised by Prof. Mark Hansen (UCLA) for his entire PhD. Ryan Julian was co-advised by Prof. Stefan Schaal till 2018.*

*In addition to the students below, I helped advise DeWitt Latimer IV (2008, advisor of record was Prof. Barry Boehm (USC)) and Laehyun Kim (2003, advisor of record was Prof. Mathieu Desbrun (USC)).*

*A ⋆ before the person's name denotes they are in a tenured position and a † denotes that they are in a tenure-track position.*

35. Baskın Şenbaşlar, 2023 **2023**
    Thesis: *Decentralized Real-time Trajectory Planning for Multi-robot Navigation in Cluttered Environments*
    First Employment: Research Scientist, NVIDIA
    Current Employment: Research Scientist, NVIDIA

34. Isabel Rayas Fernández, 2023
    Thesis: *Advancing Robot Autonomy for Long-Horizon Tasks*
    First Employment:
    Current Employment:

33. Christopher E. Denniston, 2023
    Thesis: *Active Sensing in Robotic Deployments*
    First Employment: Lead Multi-robot SLAM Engineer, Offworld
    Current Employment: Lead Multi-robot SLAM Engineer, Offworld

32. Aleksei Petrenko, 2023
    Thesis: *High-Throughput Methods for Simulation and Deep Reinforcement Learning*
    First Employment: Research Scientist, Apple
    Current Employment: Research Scientist, Apple

31. James Preiss, 2022 **2022**
    Thesis: *Characterizing and Improving Robot Learning: A Control-theoretic Perspective*
    First Employment: Postdoctoral scholar, Computing and Mathematical Sciences, Caltech
    Current Employment: Postdoctoral scholar, Computing and Mathematical Sciences, Caltech

30. Eric Heiden, 2022
    Thesis: *Closing the Reality Gap via Simulation-based Inference and Control*
    First Employment: Research Scientist, NVIDIA
    Current Employment: Research Scientist, NVIDIA

29. Ryan Julian, 2021 **2021**
    Thesis: *Algorithms and Systems for Continual Robot Learning*
    First Employment: Senior Research Software Engineer, Google Brain
    Current Employment: Senior Research Software Engineer, Google Brain

28. Max Pflueger, 2020 **2020**
    Thesis: *Learning from Planners to Enable New Robot Capabilities*
    First Employment: Software Engineer, Waymo
    Current Employment: Software Engineer, Waymo

27. Artem Molchanov, 2020
    Thesis: *Data Scarcity in Robotics: Leveraging Structural Priors and Representation Learning*
    First Employment: Senior Deep Learning Scientist (Autonomous Driving), NVIDIA
    Current Employment: Senior Deep Learning Scientist (Autonomous Driving), NVIDIA

26. Giovanni Sutanto, 2020
    Thesis: *Leveraging Structure for Learning Robot Control and Reactive Planning*
    First Employment: Software Engineer, Google X
    Current Employment: Software Engineer, Intrinsic

25. Yevgen Chebotar, 2019 **2019**
    Thesis: *Data-Driven Acquisition of Closed-Loop Robotic Skills*
    First Employment: Research Scientist, Google Brain
    Current Employment: Research Scientist, Google Brain

24. Stephanie Kemna, 2018 **2018**
    Thesis: *Multi-Robot Strategies for Adaptive Sampling with Autonomous Underwater Vehicles*
    First Employment: Software Engineer and Project Manager, Maritime Robotics AS
    Current Employment: Principal Researcher, DNV

23. Karol Hausman, 2018
    Thesis: *Rethinking Perception-Action Loops via Interactive Perception and Learned Representations*
    First Employment: Research Scientist, Google Brain
    Current Employment: Senior Research Scientist, Google Brain

22. David Kim, 2018
    Thesis: *Learning Affordances by Interactive Perception and Manipulation*
    First Employment: Robotics Technologist, NASA Jet Propulsion Laboratory
    Current Employment: Robotics Technologist, NASA Jet Propulsion Laboratory

21. Christian Potthast, 2016 **2016**
    Thesis: *Information Theoretical Action Selection*
    First Employment: Senior Software Engineer, Faraday Future
    Current Employment: Manager, Tech Lead, Perception, Toyota Research Institute

20. Megha Gupta, 2014 **2014**
    Thesis: *Intelligent Robotic Manipulation of Cluttered Environments*
    First Employment: Core Team Member (R & D Division), ThinkLABS Technosolutions Pvt. Ltd.
    Current Employment: Data Scientist, Wysa

19. Jnaneshwar Das, 2014
    Thesis: *Data-driven Robotic Sampling for Marine Ecosystem Monitoring*
    First Employment: Postdoctoral Fellow, University of Pennsylvania
    Current Employment: Assistant Research Professor, Arizona State University

18. Arvind Pereira, 2014
    Thesis: *Risk-aware Path Planning for Autonomous Underwater Vehicles*
    First Employment: Software Engineer, Clover Network Inc.
    Current Employment: Senior Software Engineer, Applied Intuition

17. † Ryan Williams, 2014
    Thesis: *Interaction and Topology in Distributed Multi-Agent Coordination*
    First Employment: Postdoctoral Fellow, University of Southern California
    Current Employment: Assistant Professor, Electrical and Computer Engineering, Virginia Tech

16. Harshvardhan Vathsangam, 2014
    Thesis: *Sense and Sensibility: Statistical Techniques for Human Energy Expenditure Estimation Using Kinematic Sensors*
    First Employment: Postdoctoral Fellow, USC and Founder, Moving Analytics, Inc.
    Current Employment: Founder and CEO, Moving Analytics, Inc.

15. Jonathan Binney, 2012 **2012**
    Thesis: *Informative Path Planning for Environmental Monitoring*
    First Employment: Research Engineer, Willow Garage, Menlo Park, CA
    Current Employment: Co-Founder, Iron Ox, San Francisco, CA

14. ⋆ Jonathan Kelly, 2011 **2011**
    Thesis: *Visual-Inertial Sensor Fusion and Spatiotemporal Calibration for High Accuracy Navigation*
    First Employment: Postdoctoral Fellow, Massachusetts Institute of Technology, Cambridge, MA
    Current Employment: Associate Professor, Aerospace Engineering, University of Toronto

13. ⋆ Karthik Dantu, 2010 **2010**
    Thesis: *Reconfiguration in Sensor Networks*
    First Employment: Postdoctoral Fellow, Harvard University, Cambridge, MA
    Current Employment: Associate Professor, Computer Science, SUNY Buffalo

12. Kale Harbick, 2008 **2008**
    Thesis: *Design and Control of a Two-Mode Monopod*
    First Employment: Instructor, Department of Energy Management, Lane Community College, Eugene, OR
    Current Employment: Research Agricultural Engineer, US Department of Agriculture (USDA) Agricultural Research Service (ARS)

11. Sameera Poduri, 2008
    Thesis: *Mobility-based Topology Control of Robot Networks*
    First Employment: Postdoctoral Fellow, University of Southern California, Los Angeles, CA
    Current Employment: Senior Manager, Machine Learning, Uber AI, Uber

10. ⋆ Marin Kobilarov, 2008
    Thesis: *Discrete Geometric Motion Control of Autonomous Vehicles*
    First Employment: Postdoctoral Fellow, California Institute of Technology, Pasadena, CA
    Current Employment: Associate Professor, Mechanical Engineering, Johns Hopkins University

9. Bin Zhang, 2008
    Thesis: *Adaptive Sampling with a Robotic Sensor Network*
    First Employment: Senior Software Engineer, Microsoft Corporation, Redmond, CA
    Current Employment: Senior Software Engineer, Microsoft Corporation, Redmond, CA

8. Gabe Sibley, 2007 **2007**
    Thesis: *Long Range Stereo Data-Fusion from Moving Platforms*
    First Employment: Postdoctoral Research Assistant, Department of Engineering, University of Oxford, Oxford, UK
    Current Employment: Founder and CEO, Verdant Robotics, Inc.

7. ⋆ Srikanth Saripalli, 2007
    Thesis: *Identification, Control and Visually-Guided Behavior for a Model Helicopter*
    First Employment: Member of the Technical Staff, Jet Propulsion Laboratory, Pasadena, CA
    Current Employment: Professor, Mechanical Engineering, Texas A&M, College Station, TX

6. David Naffin, 2006 **2006**
    Thesis: *Multi-robot Formations: Rule-based Synthesis and Stability Analysis*
    First Employment: NavCom Technology Inc., Torrance, CA, USA
    Current Employment: Senior Robotics Systems Engineer, John Deere, Torrance, CA, USA

5. ⋆ Denis Wolf, 2006
    Thesis: *Semantic Mapping using Mobile Robots*

First Employment: Postdoctoral Fellow, Instituto de Ciências Matemáticas e de Computação, Universidade de São Paolo - São Carlo, SP, Brazil
Current Employment: Associate Professor, Instituto de Ciências Matemáticas e de Computação, Universidade de São Paolo - São Carlo, SP, Brazil

4. Stefan de Nagy Koves Hrabar, 2006
Thesis: *Vision-based 3D Navigation for an Autonomous Helicopter*
First Employment: Senior Research Scientist, Autonomous Systems Laboratory, CSIRO ICT Centre, Brisbane
Current Employment: CEO and Co-Founder, Emesent

**2005**

3. Mohammed Rahimi, 2005
Thesis: *Bioscope: Actuated Sensor Network for Biological Science*
First Employment: Research Staff Member, Center for Embedded Networked Sensing (CENS), UCLA, Los Angeles, CA, USA
Current Employment: Engineering Manager, OKTA, Innc.

2. Boyoon Jung, 2005
Thesis: *Cooperative Target Tracking using Multiple Mobile Robots*
First Employment: NavCom Technology Inc., Torrance, CA, USA
Current Employment: Senior Robotics Engineer, John Deere, Torrance, CA, USA

1. Maxim A. Batalin, 2005
Thesis: *Symbiosis: Cooperative Algorithms for Robots and a Sensor Network*
First Employment: Research Scientist, Center for Embedded Networked Sensing (CENS), UCLA, Los Angeles, CA, USA
Current Employment: CEO, Lucendi, Inc.

## Thesis Committees

*Unless otherwise noted, all students listed below received their degrees from USC.*

1. PhD Thesis Committee Chair: Max Pflueger (20), Artem Molchanov (20), Giovanni Sutanto (20), Yevgen Chebotar (19), Stephanie Kemna (18), Karol Hausman (18), David Kim (18), Christian Potthast (16), Megha Gupta (14), Jnaneshwar Das (14) Harshvardhan Vathsangam (14), Ryan Williams (14), Arvind Pereira (14), Jonathan Binney (12), Jonathan Kelly (11), Karthik Dantu (10), Kale Harbick (08), Marin Kobilarov (08), Bin Zhang (08), Sameera Poduri (08), DeWitt Latimer IV (08, co-chair) Gabriel Sibley (07), Kale Harbick (07), Srikanth Saripalli (07), Stefan Hrabar (06), Denis Wolf (06), David Naffin (06), Mohammed Rahimi (05), Maxim Batalin (05), Boyoon Jung (05), Laehyun Kim (03, co-chair)

2. PhD Thesis Committee Member (Sukhatme also served on these students' PhD qualifying exam committee): Aaron St. Clair (15), Randolph Voorhies (15), Mrinal Kalakrishnan (14), Peter Pastor (14), Keith O'Hara (Georgia Tech 11), Yi Wang (11), William Yeoh (10), Amitabha Ghosh (10), Marcos

Vieira (10), Sundeep Pattem (10), Henrik Borgstrom (UCLA 09), Christian Siagian (09), Michael Mistry (09), Jo-Anne Ting (08), Dylan Shell (08), Jeff Norris (08), Sam Malek (07), Chartchai Meesookho (07), Daniel Arbuckle (07), Praveen Paruchuri (07), Jan Peters (07), Nidhi Kalra (CMU 06), Haiyan (Nancy) Hu (06), Aman Kansal (UCLA 06), Krishna Chintalapudi (05), Migrui Zhu (05), Yang Yu (05), Huseyin Kiziloca (04), Ranjit Nair (04), Marija Mikic-Rakic (04), Qun Li (Dartmouth 03), Yonggang (Jerry) Zhao (03), John Spletzer (Penn 03), Hyukchul Jung (03), Monica Nicolescu (03), Brian Gerkey (03), Jong Weon Lee (02), Dani Goldberg (01), Stergios Roumeliotis (00)

3. PhD Thesis Committee Member (Sukhatme served on these students' thesis committee but was not a member of the qualifying exam committee): Zhenwang Yao (SFU 11), Sabine Hauert (EPFL 10), Marcus Chang (DIKU, Copenhagen 10), Jens Waverla (SFU 10), Philippe Giguere (McGill 10), Jim Pugh (EPFL 08), Animesh Pathak (08), Haye Lau (UT Sydney 07), Gregg Buskey (U Queensland 04),

4. PhD Qualifying Exam Committee Member (Sukhatme served on these students' PhD qualifying exam committee but not on the final PhD thesis committee): Joshua Inouye (11), Srinivas Yerramalli (11), Jacob Everist (10), Erica Seubert (10), Unkyu Park (10), , Beth Stauffer (09), Leslie Cheung (09), Michael Rubenstein (08), Mohammad Jahanshahi (08), Hyunjin Yoon (08), George Edwards (08), David Feil-Seifer (08), Mazda Ahmadi (UT Austin 07), Syed Affan (07), Mehdi Sharifzadeh (06), Kiran Yedavalli (06), Chang Yuan (06), Alex Lam (06), Jabed Faruque (06), Jaejoon Lee (05), Babak Mokaberi-Nezhad (04), Fred Stann (04), Chris Jones (04), Narayanan Sadagopan (03), Migrui Zhu (03), Bhavna Hirani (03), Sumit Mohanty (02), Clint Chua (02), Bolan Jiang (02), Haeyoung Lee (02), Behnam Salemi (02), Jun-Yong Noh (01), Barry Werger (01)

## Current Supervision

1. Doctoral students: Sumeet Batra, Marcus Dominguez-Kuhne, Karkala Shashank Hegde, Eric Heiden, Ryan Julian, David Millard, Aleksei Petrenko, James Preiss, Isabel Rayas Fernández, Gautam Salhotra, Baskin Senbaslar, Bingjie Tang, KR Zentner, and Connie Zhang

2. Postdoctoral research associates: Ragesh Ramachandran

## Former Supervision (current employment, where known, is in brackets following each name)

1. Research faculty supported on Sukhatme grants: Dr. Andrew Howard (Scientist, SpaceX)

2. Postdoctoral research associates: Peter Englert, Pradipta Ghosh (co-advised with Ramesh Govindan) (Facebook), Dr. Oliver Kroemer (CMU), Dr. Lantao Liu (Indiana University), Dr. Andreas Breitenmoser, Dr. Joerg Mueller (Google X), Dr. Geoff Hollinger (Associate Professor, Oregon State University), Dr. Ian Kelly, Dr. Ashley Tews (Research Engineer, CSIRO), Dr. Anand Panangadan, Dr. Torbjorn Dahl (Senior Lecturer, University of Wales), Dr. Richard Vaughan (Associate Professor, Simon Fraser University), Dr. Ryan Smith (Lecturer, Queensland University of Technology), Dr. Jonathan Kelly (Associate Professor, University of Toronto), and Dr. Sameera Poduri (Qualcomm Bay Area Research and Development Group), Dr. Harshvardhan Vathsangam (CEO and Founder, Moving Analytics, Inc.)

3. Research scientists: Kasper Stöy (Associate Professor, University of Southern Denmark), Esben Østergaard (Assistant Professor, University of Southern Denmark), Jens Wawerla (PhD student, Simon Fraser University)

4. Visiting doctoral students: Se-Jin Lee (2008), Hongmo Je (2006), Luis Mejias (2004), Sangyoon Lee (2003)

5. Doctoral students (current employment listed in Section 7): Hordur Heidarsson (Fulbright Scholar), Stephanie Kemna (USC Viterbi School of Engineering Dean's Fellow), Karol Hausman (2018, USC Viterbi School of Engineering Dean's Fellow), Inkyu (David) Kim (2018), Christian Potthast (2016, USC Viterbi School of Engineering Dean's Fellow), Jnaneshwar Das (2014), Megha Gupta (2014, USC Provost Fellow), Arvind Pereira (2014), Ryan Williams (2014, USC Viterbi School of Engineering Dean's Fellow), Jonathan Binney (2012, USC Viterbi School of Engineering Dean's Fellow), Jonathan Kelly (2011, USC Annenberg Fellow and NSERC Post Graduate Studentship from the government of Canada), Karthik Dantu (2008), Marin Kobilarov (2008, USC Viterbi School of Engineering Dean's Fellow), Sameera Poduri (2008 WiSE Merit Fellowhip 2006-07), Kale Harbick (2008, Powell Foundation Fellow and Rockwell Dennis Hunt Scholastic Award), Bin Zhang (2008), DeWitt Latimer IV (2008), Gabe Sibley (2007), Srikanth Saripalli (2007), Denis Wolf (2006), Stefan de Nagy Koves Hrabar (2006), David Naffin (2006), Mohammed Rahimi (2005), Boyoon Jung (2005), Maxim Batalin (2005), Laehyun Kim (2003)

6. Visiting pre-doctoral students: Peter Hiemstra (2004)

7. Masters students: Aravind Kumaraguru, Chester Corcos (USC Viterbi School of Engineering Dean's Fellow), Vipresh Gangwal, Max Pflueger, Gokul Ramachandran, Ankit Sharma, Anupam Tulsyan, Anoop Nimkar, Amit Dhariwal, Onur Sert, Mansi Shah, Haiyan Hu, Vinay Malekal, Ambrish Verma, Goksel Dedeoglu, Puneet Goel, Lingling Zhang, Angela Nam, Francisco J. Mesa-Martinez, Lian Duan, Melanie Vida, Minoo Akbarian, Milo Silverman, Weirong Zhu

8. Undergraduates: Antal Spector-Zabusky (REU 2010), Gautam Dandavate, Michael Uy, Dan Nies, Kristina Lakiotis (REU 2008), Khoo Yit Phang, Heriberto Reynoso (REU 2008), Sajid Siddiqi, Sanjeev Koppal, Michael Poole, Kale Harbick, Kyaw Zin Thein, Andy Ramakrishna, Hasan Bahcivan

# 8 Professional and University Service (not updated regularly after 2012)

## Service to the Profession

1. Journal Editorial Boards and Editorships
   (a) Editor-in-Chief, *Autonomous Robots*, July 2007 - current
   (b) Member of the Editorial Board, *Springer Tracts in Advanced Robotics (STAR)*, Oct 2008 - current
   (c) Associate Editor, *Autonomous Robots*, March 2005 - July 2007
   (d) Member of the Editorial Board, *Autonomous Robots*, January 2005 - March 2005
   (e) Associate Editor, *IEEE Transactions on Robotics*, May 2004 - May 2007
   (f) Associate Editor, *IEEE Transactions on Mobile Computing*, Jan 2006 - May 2007
   (g) Member of the Editorial Board, *IEEE Pervasive Computing*, October 2002 - May 2007
2. Standing Committees and Conference Boards
   (a) Associate Vice-President, Financial Activities Board (FAB), IEEE Robotics and Automation Society, 2010-2011
   (b) Member, Conference Activities Board (CAB), IEEE Robotics and Automation Society, 2008-2009
   (c) Member, Publications Activities Board (PAB), IEEE Robotics and Automation Society, 2008-2009
   (d) Member, Steering Committee on Technical Programs (SCTP), IEEE Robotics and Automation Society, 2007-2008
   (e) Associate Editor, *Robotics and Automation Society Conference Editorial Board*, 2006 - 2007
   (f) Co-Chair, *IEEE Robotics and Automation, Technical Committee on Networked Robots*, 2006
3. Reviewing Research Proposals
   (a) Reviewer, NASA Postdoctoral Program, April 2009
   (b) Reviewer, NSF CISE panel on Robust Intelligence, March 2009 and March 2011
   (c) Reviewer, AAS Research Competitiveness Program (for KACST)
   (d) Adhoc Reviewer, NSF CAREER panel, November 2008
   (e) Reviewer, DoD EPSCoR program, August 2008 and November 2008
   (f) Reviewer, Army Research Office, April-May, 2006
   (g) Reviewer, NSF CAREER panel, November 7, 2005
   (h) Reviewer, Natural Sciences and Engineering Research Council of Canada, July 2005
   (i) Reviewer, MIT Sea Grant Program, July 2005

(j) Reviewer, EURON (European Robotics Research Network), May 2005

(k) Reviewer, NSF CAREER panel, November 2-3, 2004

(l) Reviewer, NASA Intelligent Systems Project Research Announcement in Automated Reasoning, November 2003

(m) Reviewer, NSF CISE panel on networking research, December 11-12, 2001

(n) Reviewer for Surface System Thrust proposals, NASA research announcement on advanced technology sponsored by the Cross Enterprise Technology Development Program (CETDP), April 2000

4. Reviewing Papers for Journals and Magazines: *IEEE Transactions on Robotics (formerly IEEE Transactions on Robotics and Automation, Autonomous Robots, ACM Transactions on Sensor Networks, Journal of Field Robotics, IEEE Transactions on Systems, Man and Cybernetics, IEEE/ASME Transactions on Mechatronics, IEEE Control Systems Magazine, and Artificial Intelligence*

5. Conference General Chairmanship

   (a) Robotics: Science and Systems: 2006

6. Conference Program Committee Chairmanships

   (a) International Symposium on Multi-robot and Multi-agent Systems: 2017

   (b) IEEE/RSJ International Conference on Intelligent Robots and Systems: 2011

   (c) International Symposium on Experimental Robotics: 2010

   (d) IEEE International Conference on Robotics and Automation: 2008

   (e) Robotics: Science and Systems: 2005

7. Conference Program Committee Memberships

   (a) Robotics

      i. CASE: 2010, 2009 (Chair, sensor networks track)

      ii. ROBOCOMM: 2009

      iii. Robotics Science and Systems (RSS): 2008

      iv. Workshop on the Algorithmic Foundations of Robotics (WAFR): 2006

      v. IEEE International Conference on Robotics and Automation (ICRA): 2010, 2009, 2007, 2006, 2005, 2004, 2002, 2000, 1999

      vi. IEEE International Conference on Robotics and Automation (ICRA) Video Proceedings: 2005, 2004

      vii. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS): 2017, 2007, 2003

      viii. International Conference on Field and Service Robotics (FSR): 2017, 2011, 2009, 2003

      ix. ACM Symposium on Applied Computing (SAC) - Intelligent Robotic Systems: 2009, 2008

x. International Conference on Intelligent Autonomous Systems (IAS-7): 2002
xi. International Symposium on Distributed Autonomous Robotic Systems (DARS): 2004, 2000
xii. IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA): 1999
xiii. Workshop on Interactive Robotics and Entertainment: 2000

(b) Sensor Networks

i. Applications Track of International Conference on Distributed Computing in Sensor Systems (DCOSS): 2007, 2006
ii. IEEE International Conference on Networking, Sensing and Control (ICNSC): 2006
iii. End to End Sense and Respond Systems, Applications, and Services Workshop: 2005
iv. The First IEEE International Conference on Sensors and Ad Hoc Communications and Networks (SECON): 2004
v. The First IEEE Workshop on Embedded Networked Sensors (EmNetS-I): 2004
vi. Information Processing in Sensor Networks (IPSN): 2007, 2004, 2003
vii. IPSN Track on Sensor Platforms, Tools and Design Methods for Networked Embedded Systems (SPOTS): 2006, 2005
viii. ACM SenSys: 2003

(c) Artificial Intelligence and Agents

i. National Conference on Artificial Intelligence (AAAI) Senior PC: 2005, Junior PC: 2002, 2000
ii. International Joint Conference on Artificial Intelligence (IJCAI) Junior PC: 2003
iii. International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) Junior PC: 2005, 2004, 2003, 2002
iv. International Conference on Autonomous Agents Junior PC: 2000, 1998
v. IEEE Swarm Intelligence Symposium: (2005)

(d) Other

i. International Conference on Compilers, Architecture and Synthesis for Embedded Systems (CASES): 2002

8. Symposium and Workshop Organization

(a) Co-Organizer (with W. Burgard), Robotic Sensor Networks, Robotics: Science and Systems, June 2007

(b) Co-Organizer (with A. Darwiche, and D. Estrin), AAAI 2004 Workshop on Sensor Networks, July 2004

(c) Co-Organizer (with W. Kaiser and D. Estrin), ICRA 2004 Workshop on Networked Infomechanical Systems (NIMS), April 2004

(d) Co-Organizer (with C. Ortiz, L. Parker, and M. Tambe), AAAI 2004 Spring Symposium on Bridging the Multi-agent and Multi-robotic Research Gap, March 2004

(e) Member, Organizing Committee, NSF Workshop and PI meeting on Robotics and Computer Vision (RCV), IROS 2003

(f) Co-Chair (with T. Balch), AAAI 2002 Spring Symposium on Intelligent Embedded Distributed Systems, March 25-27, 2002

(g) Publicity Chair, Americas School on Agents and Multiagent Systems, University of Southern California, January 2002

(h) Touch in Virtual Environments: A one-day workshop on Haptics at USC, co-organized with M. McLaughlin and J. Hespanha (2/23/2001)

9. Other

(a) Invited Speaker, Second Intel XScale Platform Workshop and Robotics Forum, January 22-23, 2003

(b) Invited Speaker and Panelist, First Intel XScale Platform Workshop and Robotics Forum, January 23-24, 2002

## Department, School and University Service

1. Member, University Research Committee, 9/11-4/12
   USC Provost and Academic Senate

2. Co-Chair, Faculty Search Committee, 9/11-4/12
   USC Computer Science Department

3. Member, USC Women in Science and Engineering (WiSE) Advisory Board, 9/11- 8/12
   USC Provost

4. Chair, Research Assistant Professor Appointments, 9/11-4/12
   USC Computer Science Department

5. Member, Research Faculty Appointment Processes, 5/08 - 5/09
   USC Computer Science Department

6. Member (at-large), 8/07-8/09
   Appointments, Promotions, and Tenure Committee, USC Viterbi School of Engineering

7. Member, Engineering Faculty Council, 8/07-7/10
   USC Viterbi School of Engineering

8. Member, Chair Search Committee, 11/07-5/08
   USC Computer Science Department

9. Member, Viterbi School of Engineering, Faculty Research Award Committee — 4/07-3/09
10. Member, Fellowships, Prizes and Awards Committee, USC Graduate School — 12/06-04/07
11. Ambassador to the USC President — 9/05-current
12. Chair, MS Curriculum Committee, USC Computer Science Department — 1/04 - 2/07
13. Member, Chair Evaluation Committee, USC Computer Science Department — 12/03 - 3/04
14. Member, Faculty Search Committee, USC Computer Science Department — 11/01 - 5/02
15. PhD Admissions Committee, USC Computer Science Department
    (a) Chair — 6/01 - 5/06
    (b) Member — 1/98 - 5/01,11/07-5/11
16. Commencement Marshall — 5/02
17. Organizer, Research Activities Presentation (RAP), USC Computer Science Department — 7/98 - 7/00
18. Technical Reports Coordinator, Institute for Robotics and Intelligent Systems (IRIS) — 11/98 - 1/05
19. Member, Salvatori Remodeling Committee — 6/99 - 9/99
20. President, USC Computer Science Graduate Organization — 6/93 - 5/94
21. General Secretary (Academic Affairs), IIT Bombay — 6/90 - 5/91

# 9 Other Professional Activities (not updated regularly after 2012)

1. Participant, Third Interlink Workshop on Intelligent Cognitive Systems Los Angeles, CA, USA, September 4-5, 2008
2. Member, External Advisory Committee, Center for Perceptual Robotics, Intelligent Sensors and Machines (PRISM), CCNY, Oct 2005 - present
3. Member, Board of Directors, Society for Counter-Ordnance Tecnology (SCOT), March 2001 - February 2003
4. Workshops (as invited participant)
    - DARPA Workshop on Navigation, Locomotion, and Articulation, Washington DC, November 11, 2003
    - DARPA Micro Air Vehicles (MAV) Workshop, Washington DC, April 1999
    - DARPA Small Multi-Agent Reconnaissance Technology Workshop, Washington DC, May 1997
    - ONR Workshop on Biologically Inspired Locomotion, MIT, Cambridge, MA, June 1997
5. Talks at Symposia, Tutorials, Workshops
    - Coverage with Communication Constraints in Mobile Sensor Networks, Workshop on The State of the Art in Mobile Robot Area Coverage, IEEE ICRA, 4/26/04
    - Marine applications of Networked Infomechanical Systems, Workshop on Networked Infomechanical Systems (NIMS), IEEE ICRA, 4/27/04
    - Algorithms for Robot-based Network Deployment, Repair, and Coverage, Workshop on Wireless and Networked Robots, IEEE ICRA, 4/17/04
    - Coordinated Mobility and Marine Applications, Tutorial on Networks of Mobile Sensors, IEEE SECON, 10/3/04
    - AAAI Spring Symposium 1998 - Hardware Implementation as a tool for Integrating Robotic Research, Stanford, March 1998
    - MENOII - A Quadruped Walking Robot Testbed, Demonstration given at the First International Conference on Autonomous Agents, Marina del Ray, Feb 5-8, 1997
    - AAAI Spring Symposium 1993 - A Dextrous Robot Hand as a Prosthetic Device, Stanford, March 1993
6. AUVSI Unmanned Aerial Vehicle Competition, USC team member, Atlanta, July 1993 and 1994 (First place award).

# 10 Selected Media Coverage (not updated since 2007)

1. The NAMOS project was featured in the Autumn 2007 issue of the USC Trojan Family Magazine and in the Daily Breeze and The Redondo Log. (July - August 2007)
2. Popular Science magazine ran a story on the robot mapping work in the Sukhatme lab at USC (August, 2006)
3. The Idlewild Town Crier ran a story on the NAMOS and NIMS experiments at Lake Fulmor, which also featured the USC AVATAR (May, 2006)
4. Interviewed on Weekend America (NPR) about the future of robotic vehicles (October 8, 2005)
5. Interviewed on California Connected as part of their story on CENS (September 23, 2005)
6. Quoted in the Associated Press story "U.S. considers turning scooters into war robots." (also appeared on Slashdot, 11/28/2003)
7. Research about the robomote featured on the National Science Foundation's Office of Legislative and Public Affairs page, Oct 2003
8. Interview in LA Weekly, on sensor network research (article by Jason Keehn, Sept 22, 2002)
9. Research on NSF ITR grant (with A. Requicha, D. Estrin, D. Caron, and M. Matarić) using distributed robotics and sensor networks covered in the Associated Press (article by Leon Drouin Keith, Jan 11, 2002), in Wired Magazine (article by Joanna Glasner, Jan 15, 2002), on Unisci.com, Slashdot.org, the USC News Service, and elsewhere, Jan 2002.
10. Interview on Techlink, KADL TV, Los Angeles, (aired May 11 - 17, 2002)
11. Quoted in New York Times article "Designers take robots out of human hands" featuring USC robotic helicopter, 2/28/02
12. Interview on The Learning Channel program "Understanding Future War", 11/15/01
13. Interview on Tech TV coverage of Artificial Intelligence, 8/13/01
14. Interview in "User-Friendly Machines Help Boost Performance in Robots", National Defense Magazine 6/2001
15. Wired Online covered the class on Intelligent Embedded Systems, `http://www.wired.com/news/school/0,1383,43195,00.html`, 4/28/2001
16. KNBC-4 TV covered the "Touch in Virtual Environments" conference on their News 2/23/2001
17. Interview in the The Wall Street Journal, 9/8/1999
18. KCBS-2 TV covered urban robot mapping on their "News at 10 Science Report" 9/6/1999
19. Interview in `www.theforce.co.uk`, Frontiers Magazine, July 1999
20. Interview in `www.eetimes.com`, February 1997

# 11 Professional Memberships and Personal Information

1. Fellow, Institute of Electrical and Electronic Engineers (IEEE)
2. Member, IEEE Robotics and Automation Society
3. Member, IEEE Ocean Engineering Society
4. Member, Association for Computing Machinery (ACM)
5. Fellow, American Association for Artificial Intelligence (AAAI)
6. Member, American Associate for the Advancement of Science (AAAS)

Married, two children.
US Citizen (naturalized)