Karthik Dantu **Curriculum Vitae** **December 2018**

CONTACT

Computer Science and Engineering
University at Buffalo, State University of New York
338 Davis Hall
Buffalo, NY 14260-2500

voice: (716) 645-2670
email: kdantu@buffalo.edu
www: http://www.cse.buffalo.edu/faculty/kdantu/

RESEARCH INTERESTS

I am interested in designing large-scale systems that combine computing, communication, sensing, and actuation, such as multi-robot systems, networked embedded systems, and mobile systems.

EDUCATION

University of Southern California Los Angeles, CA
Department of Computer Science
Ph.D., Computer Science, May 2010
- Dissertation: Reconfigurable Sensor Networks
- Advisor: Prof. Gaurav S. Sukhatme

M.S., Computer Science
- Dissertation: Power-awareness in embedded systems
- Advisor: Prof. Massoud Pedram

Sri Jayachamarajendra College of Engineering Mysore, India
Department of Computer Science and Engineering
B.E., Computer Science and Engineering, 1999
- Dissertation: Implementing SACK and T/TCP in Linux 2.0.36
- Advisor: Prof. Kumar Sivarajan

RESEARCH EXPERIENCE

Assistant Professor *Aug 2013—present*
SUNY-Buffalo Buffalo, NY
Department of Computer Science and Engineering
Distributed Robotics and Networked Embedded Systems (DRONES) Lab
Co-Director, Reliable Mobile Systems (with Prof. Steve Ko and Prof. Lukasz Ziarek)

Postdoctoral Fellow *March 2010—Aug 2013*
Harvard University Cambridge, MA
School of Engineering and Applied Sciences
RoboBees Project

Graduate Researcher *Jan 2001—Jan 2003*
University of Southern California Los Angeles, CA

Research Intern *May 2005 — Aug 2005*
UC Berkeley Earthquake Engineering Research Center Berkeley, CA

TEACHING EXPERIENCE

University at Buffalo Buffalo, NY
Department of Computer Science and Engineering

CSE 468/568: Robotics Algorithms *Sp 14-16,18 F 16,18*
- Completely re-designed course introducing robotics to seniors and first year graduate students

- Material included kinematics, probabilistic algorithms for localization and mapping, planning, and navigation
- Students also implemented algorithms on Robot Operating System (ROS)
- Course had homeworks, midterm, and finals along with the programming assignments

CSE 622: Advanced Computer Systems *Fall 13, 14, 16, 18*

- Advanced graduate course dealing with Android internals
- Studied papers on modern computer systems
- Projects based on the Android kernel and framework
- 2013: Resulted in one masters thesis and a paper in EUC 2016
- 2014: Resulted in HotStorage '15 paper, an IoTDI '16 paper and two masters theses
- 2-16: Resulted in one masters thesis

CSE 421/521: Operating Systems *Fall 17*

- Concurrency, processes, threads, scheduling
- Memory management
- I/O
- Assignments based on PintOS, an open-source academic OS
- Students implemented scheduler, system calls and virtual memory
- Course also had a midterm and a final

CSE 610: Intelligent Sensing Systems *Spring 17*

- Advanced graduate course on modern sensor systems
- Studied topics related to coordinate frames and visual sensing
- Read papers on sensing algorithms and systems
- Projects based on developing novel applications/algorithms for UAVs/augmented reality
- All projects on a quadrotor platform or the Microsoft Hololens

CSE 749:Multi-Robot Coordination *Fall 15*

- Seminar course on Multi-Robot coordination
- Read papers related to multi-robot systems
- Several research projects related to the field of multi-robot systems

WORK EXPERIENCE

Software Engineer *Aug 1999 — July 2000*

Tektronix Engineering Development India Bangalore, India

- Wrote embedded Java software for the high end oscilloscopes of Tektronix
- Organized special interest group meetings on Design Patterns in Java

AWARDS

- **Runner-up, best poster award** IPSN 2017
- **Distinguished Research Mentor Award**, University at Buffalo Collegiate Science and Technology Entry Program 2016.
- **Best Demo**, IPSN-SPOTS 2012
- **Runner-up, Best paper award**, IPSN-SPOTS 2012
- Internation Students Assembly, **Outstanding Service Award** 2010
- USC Robotics Lab, **George M. Bekey Outstanding Service Award**, 2010
- NSF **Travel Grant**, SenSys 2005
- Conference **Travel Grant**, SIGCOMM 2002

PROFESSIONAL MEMBERSHIPS

- Institute of Electrical and Electronics Engineers (IEEE)

- Association for Computing Machinery (ACM)
- Usenix
- American Association of the Advancement of Science (AAAS)

CONFERENCE / JOURNAL (H-INDEX=15, CITATIONS=1800)

Under submission

- Zakieh Hashemifar, Charuvahan Adhivarahan, Anand Balakrishnan, **Karthik Dantu**, "Improving Indoor Visual Localization/Mapping with WiFi Sensing", under submission to IPSN 2019
- Charuvahan Adhivarahan, **Karthik Dantu**, "Wisdom: Wireless Sensor Driven Distributed Online Mapping", under submission to ICRA 2019.
- Sharath Chandrashekhara, Taeyeon Ki, **Karthik Dantu**, Steven Y. Ko, "BlueMountain: An Architecture to Customize Data Management on Mobile Systems", under submission to IEEE Transactions on Mobile Computing.
- Farshad Ghanei, Jalil Modares, Nicholas Mastronarde, **Karthik Dantu**, "UB-ANC Planner: Energy-Efficient Coverage Path Planning with a Fleet of Drones", under submission to International Journal on Robotics Research.
- Zaid Tasneem, Charuvahan Adhivarahan, Dingkang Wang, Huikai Xie, Karthik Dantu, and Sanjeev J. Koppal, "Adaptive Fovea for Scanning Depth Sensors" under submission to Transactions in Robotics.

Accepted/Published: Journals

- Yin Yan, Girish Gokul, **Karthik Dantu**, Steven Y. Ko, Jan Vitek, Lukasz Ziarek, "Can Android Run on Time? Extending and Measuring the Android Platform?s Timeliness", accepted for publication in *ACM Transactions on Embedded Computing Systems (***ACM TECS***)*, 2019.
- Chang Min Park, Taeyeon Ki, Ali Ben Ali, **Karthik Dantu**, Steve Ko, "Mu: Mapping UI Events to Gesture and Voice", accepted to *Proceedings of the ACM on Human-Computer Interaction (***PACMHCI***)*, 2019.
- Farshad Ghanei, Pranav Tipnis, Kyle Marcus, **Karthik Dantu**, Steven Y. Ko, Lukasz Ziarek, "OS-Based Resource Accounting for Asynchronous Resource Use In Mobile Systems", in revisions to *IEEE Internet of Things Journal (***IEEE IoTJ***)*, 2019.
- Jalil Modares, Nicholas Mastronarde, **Karthik Dantu**, "UB-ANC Emulator: An Emulation Framework for Multi-Agent Drone Networks", in revisions to *Journal of Micro-Air Vehicles (***jMAV***)*, 2019.
- **Karthik Dantu**, Steve Ko, Lukasz Ziarek, "RAINA: Reliability and Adaptivity in Android for Fog Computing", In IEEE Communications Magazine *Special issue on Fog Computing*, pp 41-45, Volume 55, edition 4.

Accepted/Published: Conferences

- Taeyeon Ki, Chang Min Park, **Karthik Dantu**, Steve Y. Ko, Lukasz Ziarek, "Mimic: Automated UI Testing System for Android Apps", accepted to *The 41st ACM/IEEE International Conference on Software Engineering (***ICSE '19***)*, Montreal, Canada, May 2019.
- Chang Min Park, Taeyeon Ki, Ali Ben Ali, **Karthik Dantu**, Steve Ko, "Mu: Mapping UI Events to Gesture and Voice", accepted to *The 11th ACM SIGCHI Symposium on Engineering Interactive Computing Systems (***EICS '19***)*, Valencia, Spain, June 2019.
- Adam Czerniejewski, **Karthik Dantu** and Lukasz Ziarek, "jUAV: a Real-time Java UAV

Autopilot", In *The Second IEEE International Conference on Robotic Computing (***IRC '18***)*, Laguna Hills, CA.

- Sharath Chandrasekhara, Taeyeon Ki, Kyungho Jeon, **Karthik Dantu**, Steven Y. Ko, Lukasz Ziarek, "BlueMountain: An Architecture to Customize Data Management on Mobile Systems", To appear in *The 23rd Annual International Conference on Mobile Computing and Networking (***Mobicom '17***)*, Oct 2017, Salt Lake City, UT, USA. (19% acceptance)
- Yuyang Chen, Sawyer Fuller, **Karthik Dantu**, "Quadrobee: Simulating Flapping Wing Aerial Vehicle Dynamics On A Quadrotor", In *Proceedings of International Conference on Intelligent Robotics and Systems (***IROS '17***)*, Vancouver, September 2017.
- Taeyeon Ki, Alexander Simeonov, Bhavika Pravin Jain, Chang Min Park, Keshav Sharma, **Karthik Dantu**, Steven Y. Ko, Lukasz Ziarek, "Reptor: Enabling API Virtualization on Android for Platform Openness", To appear in *The 15th ACM International Conference on Mobile Systems, Applications, and Services (***Mobisys '17***)*, June 2017, Niagara Falls, NY, USA. (18% acceptance)
- Yin Yan, **Karthik Dantu**, Steve Ko, Jan Vitek, Lukasz Ziarek, "Making Android Run on Time", In Proceedings of *2017 IEEE Real-Time and Embedded Technology and Applications Symposium (***RTAS '17***)*, April 2017, Pittsburgh, PA, USA. (21% acceptance)
- Jalil Modares, Nicholas Mastronarde, **Karthik Dantu**, "UB-ANC Planner: Energy Efficient Coverage Path Planning with Multiple Drones", accepted for publication in *Proceedings of International Conference on Robotics and Automation (***ICRA '17***)*, Singapore, 2017. (41% acceptance)
- Debra Burhans, **Karthik Dantu**, "ARTY: Fueling Creativity through Art, Robotics and Technology for Youth", In Proceedings of *The Seventh Symposium on Educational Advances in Artificial Intelligence* (**EAAI '17**), Feb 2017, San Francisco, CA.
- Jalil Modares, Nicholas Mastronarde, **Karthik Dantu**, "UB-ANC Emulator: An Emulation Framework for Multi-Agent Drone Networks", In *Proceedings of I IEEE International Conference on Simulation, Modeling, and Programming for Autonomous Robots (***SIMPAR '16***)*, San Francisco, December 2016.
- Varun Anand, Karthik Dantu, Steve Ko, Dimitrios Koutsonikolas, "Multi-Interface Connectivity On Modern Mobile Devices", accepted to *14th IEEE/IFIP International Conference on Embedded and Ubiquitous Computing (***EUC '16***)*, August 2016, Paris, France.
- Farshad Ghanei, Pranav Tipnis, Kyle Marcus, **Karthik Dantu**, Steve Ko, Lukasz Ziarek, "OS-based Resource Accounting for Asynchronous Resource Use in Mobile Systems", accepted to *IEEE International Symposium on Low Power Electronics and Design (***ISLPED '16***)*, August 2016, San Francisco, CA. (33% acceptance)
- Pratik Lade, Yash Upadhyay, **Karthik Dantu**, Steve Ko, "Developing Adaptive Quantified-Self Applications Using DynaSense", *IEEE First International Conference on Internet-of-Things Design and Implementation (***IoTDI '16***)*, April 2016, Berlin, Germany. (25% acceptance)
- Richard Moore, **Karthik Dantu**, Radhika Nagpal, Geoff Barrows, "Autonomous MAV guidance with a lightweight omnidirectional vision sensor", *IEEE International Conference on Robotics and Automation (***ICRA '14***)*, June 2014, Hong Kong, China. (48% acceptance)
- **Karthik Dantu**, Spring Berman, Bryan Kate, Radhika Nagpal, "A Comparison of Deterministic and Stochastic Approaches to Allocating Spatially Dependent Tasks in Micro-Aerial Vehicle Swarms", *IEEE/RSJ International Conference on Intelligent Robots and Systems (***IROS '12***)*, Octobe 2012, Villamoura, Portugal. (45% acceptance)

- Bryan Kate, Jason Waterman, Karthik Dantu, Matt Welsh, "Simbeeotic: A Simulator and Testbed for Micro-Aerial Vehicle Experiments", *In 11th International Conference on Information Processing in Sensor Networks (SPOTS Track) (***IPSN-SPOTS '12***)*, April 2012, Beijing, China. (15% acceptance)
  Runner-up for best paper award
- **Karthik Dantu**, Bryan Kate, Jason Waterman, Peter Bailis, Matt Welsh, "Programming Micro-Aerial Vehicle Swarms with Karma", In 9th International Conference on Embedded Networked Sensor Systems (**Sensys '11**), November 2011, Seattle, WA. (19.5% acceptance)
- Mi Zhang, Anand Joshi, Ritesh Kadmawala, **Karthik Dantu**, Sameera Poduri and Gaurav S. Sukhatme, "OCRdroid: A Framework to Digitize Text using Mobile Phones", In ICST International Conference on Mobile Computing, Applications and Services (**MobiCASE '09**), October 2009, San Diego, USA.
- **Karthik Dantu**, Prakhar Goyal and Gaurav S. Sukhatme, "Relative Bearing Estimation from Commodity Radios", In IEEE International Conference on Robotics and Automation (**ICRA '09**), pp 3871–3877, May 2009, Kobe, Japan. (43% acceptance)
- **Karthik Dantu**, Gaurav S. Sukhatme, "Connectivity vs. Control: Using Directional and Positional Cues to Stabilize Routing in Robot Networks", In Proceedings of International Conference on Robot Communication and Coordination (**ROBOCOMM '09**), pp 1–7, March 2009, Odense, Denmark.
- **Karthik Dantu** and Gaurav S. Sukhatme, "Detecting and Tracking Level Sets of Scalar Fields using a Robotic Sensor Network", In IEEE International Conference on Robotics and Automation (**ICRA '07**), pp 3665–3672, April 2007, Rome, Italy.
- Krishna Chintalapudi, Jeongyeup Paek, Omprakash Gnawali, Tat Fu, **Karthik Dantu**, John Caffrey, Ramesh Govindan, Erik Johnson, "Structural Damage Detection and Localization Using NetSHM", In Proceedings of Fifth International Conference on Information Processing in Sensor Networks (**IPSN-SPOTS'06**), pp 475–482, April 2006, Nashville, TN. (25% acceptance)
- **Karthik Dantu**, Mohammad H. Rahimi, Hardik Shah, Sandeep Babel, Amit Dhariwal and Gaurav S. Sukhatme, "Robomote: Enabling mobility in sensor networks", In Fourth IEEE/ACM International Conference on Information Processing in Sensor Networks (**IPSN-SPOTS '05**), pp 404–409, April 2005, Los Angeles, USA. (21% acceptance)
- Morteza Maleki, **Karthik Dantu** and Massoud Pedram, "Lifetime Prediction Routing in Mobile Adhoc Networks", In International Wireless Communications and Networking Conference (**WCNC '03**), pp 1185–1190, March 2003.
- Kihwan Choi, **Karthik Dantu**, Wei-Chung Cheng and Massoud Pedram, "Frame-based Dynamic Voltage and Frequency Scaling for a MPEG Decoder", In IEEE/ACM International Conference on Computer-Aided Design (**ICCAD '02**), pp 732–737, September 2002, San Jose, USA.
- Morteza Maleki, **Karthik Dantu** and Massoud Pedram, "Power-aware Source Routing Protocol for Mobile Adhoc Networks", In International Symposium on Low Power Electronics and Design (**ISLPED '02**), pp 72–75, May 2002, Monterey, USA.

WORKSHOP PUBLICATIONS

- Sharath Chandrashekhara, Taeyeon Ki, **Karthik Dantu**, Steve Ko, "Duvel: Enabling Context-driven, Multi-profile Apps on Android through Storage Sand-boxing", Accepted to 1st International Workshop on Edge Systems, Analytics and Networking (EdgeSys 2018), Munich, Germany, June 2018.
- Zakieh Hashemifar, Kyung Won Lee, **Karthik Dantu**, Nils Napp, "Geometric Mapping

for Sustained Indoor Autonomy", Accepted to 1st International Workshop on Internet of People, Assistive Robots and ThingS (IoPARTS '18), Munich, Germany, June 2018.

- Matthew Rantanen, Jalil Modares, Nicholas Mastronarde, Farshad Ghanei, **Karthik Dantu**, "Performance of the Asynchronous Consensus Based Bundle Algorithm in Lossy Network Environments", Accepted to 10th IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM '18).
- Neeti Narayan, Nishant Sankaran, Devansh Arpit, **Karthik Dantu**, Srirangaraj Setlur, Venu Govindaraju, "Person Re-identification for Improved Multi-person Multi-camera Tracking by Continuous Entity Association", IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2017 (33% acceptance)
- Jalil Modares, Nicholas Mastronarde, **Karthik Dantu**, "Realistic network simulation in the UB-ANC aerial vehicle network emulator", In *The 1st IEEE International Workshop on Wireless Communications and Networking in Extreme Environments (WCNEE '17)*, Atlanta, GA.
- Adam Czerniejewski, Shaun Cosgrove, Yin Yan, **Karthik Dantu**, Steven Ko and Lukasz Ziarek, "jUAV: A Java Based System for Unmanned Aerial Vehicles", In *The 14th International Workshop on Java Technologies for Real-Time and Embedded Systems (***JTRES 2016***)*, August 2016, Lugano, Switzerland. (30% acceptance)
- Girish Gokul, Yin Yan, **Karthik Dantu**, Steven Ko, Lukasz Ziarek, "Real Time Sound Processing on Android", In *The 14th International Workshop on Java Technologies for Real-Time and Embedded Systems (***JTRES 2016***)*, August 2016, Lugano, Switzerland. (30% acceptance)
- Kyungho Jeon, Sharath Chandrashekhara, **Karthik Dantu**, Steven Y Ko, "Pixelsior: Photo Management as a Platform Service for Mobile Apps", in *8th USENIX Workshop on Hot Topics in Storage and File Systems (***HotStorage 16***)*, June 2016, Denver, CO. (25% acceptance)
- Yin Yan, Chunyu Chen, **Karthik Dantu**, Steven Y Ko, Lukasz Ziarek, "Using a Multi-Tasking VM for Mobile Applications", In *Proceedings of the 17th International Workshop on Mobile Computing Systems and Applications (***HotMobile '16***)*, February 2016, St. Augustine, FL. (32% acceptance)
- Sharath Chandrashekhara, Kyle Marcus, Rakesh G. M. Subramanya, Hrishikesh S. Karve, **Karthik Dantu**, and Steven Y. Ko, "Enabling Automated, Rich, and Versatile Data Management for Android Apps with BlueMountain", *To appear in 7th USENIX workshop on Hot Topics in Storage and File Systems (***HotStorage '15***)*, July 2015, Santa Clara, CA (30% acceptance)
- **Karthik Dantu**, Bryan Kate, Jason Waterman, Peter Bailis, Matt Welsh, "Coordinating Robotic Bee Swarms", In NSF Workshop on Pervasive Computing at Scale (**PeCS '11**), January 2011, Seattle, USA.
- Avinash Parnandi, Ken Le, Pradeep Vaghela, Aalaya Kolli, **Karthik Dantu**, Sameera Poduri and Gaurav S. Sukhatme, "Coarse In-Building Localization with Smartphones", In ICST International Workshop on Innovative Mobile User Interactivity (**IMUI '09**) alongwith MobiCASE 2009, October 2009, San Diego, USA.
- Dheeraj Kota, Neha Laumas, Urmila Shinde, Saurabh Sonalkar, **Karthik Dantu**, Sameera Poduri and Gaurav S. Sukhatme, "deSCribe: A Personalized Tour Guide and Navigational Assistant", In ICST International Workshop on Innovative Mobile User Interactivity (**IMUI '09**) alongwith MobiCASE 2009, October 2009, San Diego, USA.
- Jesse Butterfield, **Karthik Dantu**, Brian P. Gerkey, Odest C. Jenkins and Gaurav S. Sukhatme, "Autonomous biconnected networks of mobile robots", In IEEE Workshop

on Wireless Multihop Communications in Networked Robotics (**WMCNR '08**), pp 640–646, April 2008, Germany.

- **Karthik Dantu** and Gaurav S. Sukhatme, "Rethinking data-fusion based services in sensor networks", In Third Workshop on Embedded Networked Sensors (**Emnets '06**), pp 1–6, April 2006, Boston, USA.
- John Caffrey, Ramesh Govindan, Erik Johnson, Bhaskar Krishnamachari, Sami Masri, Gaurav S. Sukhatme, Krishnakanth K. Chintalapudi, **Karthik Dantu**, Sumit Rangwala, Avinash Sridharan, Ning Xu and Marco Zuniga, "Networked Sensing for Structural Health Monitoring", In Fourth International Workshop on Structural Control (**IWSC '04**), June 2004, New York, USA.

INVITED TALKS

- *Planning and Coordination in Multi-Robot Systems*
  IBM TJ Watson Research — Nov '17
  TCS Research, India — Jan '18

- *Coordinating Micro-Aerial Swarms*
  SRC Corporation — Aug '15
  INSIGHTS Program - UB Hayes Society — May '15
- *Improving OS and Networking Support for Modern Mobile Devices*
  Microsoft Research India — June '14
  Adobe Research India — June '14

PROPOSAL WRITING & PROJECT MANAGEMENT

AWARDED - TOTAL ~$2.5m
CRI:CI-NEW:COLLAB: Extensible Software Enabled Unmanned Aerial Vehicles
Agency: National Science Foundation
Total: 840k Share: 279k
Role: Co-PI
The objective of this proposal is to develop flight control software that can provide timeliness guarantees.

President's Circle Award: UB Robotics Day **2018**
Total: 30k
Agency: University at Buffalo
Role: PI jointly with Nils Napp
This project is a community outreach project to create a UB Robotics Day to invite the local community for robotics demonstrations, tutorials, discussions as well as competition. It will also bring together high schools to show off local robotics projects to the community.

ROA Supplement: Incorporating WiFi Sensing in RGB-D Mapping (May 2017-July 2019)
Total: 30k
Agency: National Science Foundation
This project is to collaborate with Canisius College to support PUI faculty in research.

CSR: Small: Project T: Enabling Open Innovation in Mobile Platforms through API Virtualization (Aug 2016-July 2019)
Total: 500k Share: 50%
Role: Co-PI

This project explores call interception and instrumentation as a technique to transform Android apps. By intercepting calls and injecting new code, we can potentially add additional functionalities in a mobile app without requiring a developer to write even a single line of code. Unlike previous research, this project focuses on how to intercept API calls at the boundary between Android apps and the Android platform.

REU Supplement: Lightweight Mapping Using MAVs **(May 2016-July 2018)**
Total: 8k

Community of Excellence on Sustainable Manufacturing and Advanced Robotics Technologies **(Aug 2015-July 2020)**
UB Internal Grant, numerous PIs
Role: Core-member, Research Group Lead, Establish/maintain Motion Capture Lab
Support: 1 student

RI: Medium: Collaborative Proposal: Novel Depth Sensor Design and Sensing Algorithms for Flapping-Wing Micro-Aerial Vehicles **(Aug 2015-July 2018)**
Total: 1.1M Share: 325k
Lead Institution: University at Buffalo
PIs: Karthik Dantu (UB), Sanjeev Koppal (Florida), Robert Wood (Harvard)
Insect-scale MAVs have the power to revolutionize traditional applications such as precision agriculture, surveillance and reconnaissance, micro-manipulation, and others. We are developing depth sensing and associated algorithms at scale to build autonomy on insect-scale MAVs to enable such applications.

MENTORING

University at Buffalo Buffalo, NY

PhD Students

- *Sharath Chandrashekhara* (joint with Steve Ko) PhD student (Fall 2014-2018)
  Project: Data Management in Mobile Systems
  Graduated: Fall 2018.
  Employment: Samsung Research, Mountain View, CA.
- *Zakieh Hashemi* Phd Student (Fall 2014—)
  Project: Simultaneous Localization and Mapping in Robot Swarms
  Tentative Graduation: Dec 2018.
- *Farshad Ghanei* Phd Student (Fall 2014—)
  Project: Energy Measurement in Mobile Systems
  Tentative Graduation: Summer 2019.
- *Ali Ben Ali* Phd Student (Fall 2014—)
  Project: Designing Vision Applications in Cloud-Edge Systems
  Tentative Graduation: Spring 2020.
- *Yuyang Chen* Phd Student (Fall 2016—)
  Project: Control Challenges for the RoboBee
  Tentative Graduation: Spring 2020.
- *Charuvahan Adhivarahan* Phd Student (Fall 2016—)

Project: Using WiFi Sensing in Multi-Robot Systems
Tentative Graduation: Fall 2020.

- *Adam Czerniejewski* (joint with Lukasz Ziarek) PhD student (Spring 2016–)
  Project: Timeliness in Robot Autonomy Software
  Tentative Graduation: Spring 2021.
- *Chang Min Park* (joint with Steve Ko) PhD student (Fall 2017–)
  Project: Automated Gesture Mapping for UI Event Sequences
  Tentative Graduation: Spring 2021.
- *Sofiya Semenova* (joint with Steve Ko) PhD student (Fall 2018–)
  Project: Systems support for Augmented Reality applications
  Tentative Graduation: Spring 2023.

Masters Students

- *Rakesh Rana* Masters Student (2017-19)
  Project: UAV-based water velocitmetry
- *Avinash Kommineni* Masters Student (2017-19)
  Project: UAV-based water velocitmetry
- *Aditya Kohli* Masters Student (2017-19)
  Project: Video Analytics First Job: Google.
- *Praneeth Behara* Masters Thesis (2017-18)
  Project: Distributed Robot Mapping
- *Alex Simeonov* Masters Student (Fall 2016, Spring 2017)
  Project: Reptor, Autoclicker
  Graduated: Spring 2017.

- *Kyle Marcus* Masters Student (Fall 2014, Spring 2015)
  Project: Resource Accounting in Mobile Systems
  Graduated: Spring 2015.
  First Job:
- *Yash Upadhyay* Masters Thesis (May 2015)
  Project: Heart Rate Monitoring and User Behaviour Anomaly Detection Using Dynasense
  First Job: Microsoft.
- *Pratik Lade* Masters Thesis (May 2015)
  Project: Calorie Tracking And Sleep Monitoring Using Dynasense
  First job: Microsoft.
- *Varun Anand* *Masters thesis (May 2014)*
  Thesis: Multi-interface Connectivity in Modern Mobile Devices
  First job: Akamai Technologies, Boston, MA.
- *Kaustubh Vartak* Masters Student (Aug 2013–Dec 2014)
  Topic: Kinematics and Gait Design for Daedalus Robot
  First employment: Bloomberg
- *Mohammadanas Saiyed* Masters Student (Aug 2013–May 2015)
  Topic: Design of Multi-Kinect Tracking System
- *Manish Jain* *Masters student (May 2014)*
  Topic: Resource Accounting in Mobile Systems
  First job: Alcatel Lucent, Sunnyvale, CA.
- *Amit Kulkarni* *Masters student (May 2014)*
  Topic: Resource Accounting in Mobile Systems

First job:RFSpot, Sunnyvale, CA.

- *Satyaditya Munipalle* *Masters student (May 2014)*
  Topic: Record and replay in mobile devices
  First job: Paypal Inc, Mountainview, CA.

Undergrad

- *Gitanjali Nandi* CS (Fall 2017–)
  Project: Crazyswarm
- *Nicholas Ceccarelli* CS (Spring 2018 –)
  Project: Data Collection For Visual SLAM
- *Peter VanNostrand* EE (Spring 2018 –)
  Project: Board design for energy sensing
- *Javier Yu* MAE (Fall 2016-Spring 2018)
  Project: UAV Swarms
  First job: PhD student in Robotics at Stanford.
- *Anand Balakrishnan* CE (Fall 2016-Spring 2018)
  Project: Data Collection for Visual SLAM and WiFi. First job: PhD student at USC.
- *Bob DeBortoli* CS (Fall 2015-Spring 2017)
  Project: MAV sensing
  First Job: PhD student in Robotics at Oregon State.
- *Manomit Bal* CE (Fall 2015-Spring 2017)
  Project: Multi-camera Localization/Tracking
  First Job: Discovery Robotics.

Harvard University Cambridge, MA
RoboBees project

- *Markus Bukhardt* *Undergraduate, REU 2012*
  Characterizing optic flow sensors on micro-helicopters.
- *Kevin Yang* *Undergraduate, REU 2012*
  Multi-kinect tracking system to track micro-helicopters.
- *Michael Behcard* *Undergraduate, REU 2012*
  Characterizing wireless signal strength performance between mobile nodes.
- *David Palmer* *Undergraduate, REU 2011*
  Implemented LQI-control for navigation of helicopters in the testbed.
- *Michelle Del Rosario* *Undergraduate, REU 2011*
  Implemented gyroscope-based dead reckoning on micro-helicopters.
- *Ben Chiel* *Undergraduate, 2010-2011*
  Performed system identification of the e-flite MCX2 micro-helicopters for **his senior thesis** in Mechanical engineering.
- *Matt Chartier* *Undergraduate, REU 2010*
  Implemented virtual worlds (caves and mazes) in custom simulator (Simbeeotic) for simulating MAV swarms.
- *Peter Bailis* *Undergraduate, REU 2010*
  Implemented accelerometer-based dead reckoning on micro-helicopters. He also continued to work with us and is a co-author on our **Sensys 2011 paper**. Received **CRA Outstanding Undergraduate Researcher award 2011**.

University of Southern California Los Angeles, CA
Robotic Embedded Systems Lab

- *Andrei Kamalov* *Undergraduate, REU 2009*
  Studied data dissemination in robot networks.
- *Herberto Reynoso* *Undergraduate, REU 2009*
  Built a hopping robot from ground up.
- *Sebastian Goodman* *Masters student, Summer—Fall 2009*
  Worked on accurate resource accounting in operating systems.
- *Prakhar Goyal* *Undergraduate, REU 2008*
  Studied effect of mobility on connectivity. Work resulted in a **ICRA 2009 paper**.
- *Mansi Shah* *Masters student, 2006-2007*
  Ported of TinyOS to a new embedded platform for seismic applications. Work resulted in a **IPSN 2007 poster**.

SERVICE

Government Grant Agencies

- Reviewer, NSF Panel - 2015, 2016, 2017.
- Reviewer, Research Grants Council of Hong Kong - 2015, 2016.

Research Program Committees

- 2018: **Co-organizer:** First workshop on Internet of People, Assistive Robots, and Things (IoPARTS) with MobiSys 2018.
  PC: ACM Sensys, DARS, ACM Mobicom, IEEE MASS.
  Publicity Chair: COMSNETS 2019.
  Associate Editor: ICRA.
- 2017: **Co-organizer:** RSS workshop on "Multi-Robot Communication In The Wild"
  PC: SECON, ACM Sensys, ICCCN
  Publicity Chair: SECON
- 2016: **PC:** ACM Sensys, IPSN, DARS, COMSNETS
  Associate Editor: ICRA
  Poster Chair: Sensys
- 2015: **PC:** IPSN, ROBIO
  Co-organizer: 2nd Workshop on Robotic Sensor Networks during CPSWeek
- 2014: **PC:** DARS, EWSN, AAAI
  Associate Editor: ICRA,
  Poster/Demo Chair: DCOSS
  Organizer: Northeast Robotics Colloquium 2014
  Co-organizer: Workshop on Robotic Sensor Networks during CPSWeek
- 2013: **PC:** S-CUBE, Sensornets
- 2012: **PC:** Sensornets
  Publication Chair: Sensys

REVIEWING

Journals

ACM Transactions on Sensor Networks
IEEE Transactions on Mobile Computing (frequently)
Journal of Sensors
IEEE Transactions on Parallel and Distributed Systems
IEEE Transactions on Wireless Communications

IEEE Journal on Selected Areas in Communications (occasionally)

Conferences
Robotics: Science and Systems
IEEE International Conference on Robotics and Automation (ICRA)
IEEE/RSJ International Conference on Robots and Systems (IROS)
Workshop on the Algorithmic Foundations of Robotics (WAFR)
IEEE Workshop on Embedded Network Sensors (Emnets)
IEEE/ACM International Conference on Information Processing in Sensor Networks (IPSN)
IEEE International Conference in Distributed Computing in Sensor Systems (DCOSS)
International Conference on Design Automation and Testing in Europe (DATE)
International Design Automation Conference (DAC)
IEEE Conference on Sensors, Mesh and Adhoc Networking and Communications (SECON)
IEEE Conference on Automation Science and Engineering (CASE)