

Santosh Balajee BANISETTY

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EDUCATION

Doctor of Philosophy in COMPUTER SCIENCE and ENGINEERING MAY 2020
University of Nevada Reno, NV | Concentration: Intelligent Systems & Robotics
Dissertation: "Multi-Context Socially-Aware Navigation Using Non-Linear Optimization"
Advisor: Prof. David FEIL-SEIFER | GPA: 3.928/4.0

Master of Science in ELECTRICAL ENGINEERING MAY 2015
NYU Tandon School of Engineering, NY | Concentration: Controls & Robotics
GPA: 3.32/4.0

Bachelor of Technology in ELECTRONICS and COMMUNICATIONS ENGINEERING MAY 2012
Jawaharlal Nehru Technological University Kakinada, India
Senior project: "An Approach to Tele-Presence using Master and Slave Robots"
Advisor: Prof. Muralidhar PV | FIRST-CLASS WITH DISTINCTION

Pre-university degree in MATHEMATICS, PHYSICS and CHEMISTRY MAY 2008
Andhra Pradesh Board of Intermediate Education, India | PERCENTAGE: 92.4

TECHNICAL SKILLS

Languages: C/C++, EMBEDDED C, PYTHON, MATLAB, ARDUINO
Software tools: ROBOT OPERATING SYSTEM (ROS), OPENCV, TENSORFLOW, KERAS, NUMPY, SCIKIT-LEARN
EDA Software tools: KICAD, ORCAD, EAGLE
Operating Systems: WINDOWS, UBUNTU, LINUX, macOS

WORK EXPERIENCE

Zebu Intelligent Systems, Hyderabad, TS JAN 2021 - PRESENT
Director

- Spearheading technology and business development, leveraging AI to drive continuous innovation.
- Built and leading a dynamic team, fostering collaboration and achieving milestones.
- Successfully secured \$550K in funding through government grants, as a principal investigator.

PureCode Software, Austin, TX & Hyderabad, TS MAY 2021 - JAN 2023
Chief Technology Officer

- Successfully recruited and managed a diverse team of 35+ employees, fostering a collaborative and high-performing work environment to build an AI based developer tool.
- Led the development and implementation of neural net architectures, associated data standards, driving innovation and ensuring the company's technological advancements.
- Played a key role in securing \$2 million in seed funding effectively presenting the technical vision.

Colorado School of Mines, Golden, CO AUG 2020 - APRIL 2021
Postdoctoral Researcher

- Worked on NLP based context-sensitive moral cognition in robot cognitive architectures.
- Explored the role of context-aware social robots in COVID and post-COVID applications.
- Mentored both graduate and undergraduate students.

University of Nevada Reno, Reno, NV JAN 2016 - MAY 2020
Research Assistant
Part-time Instructor AUG 2019 - DEC 2019

- Developed a multi-context socially-aware navigation architecture, was featured at [TechXplore](#) and [NASA](#).
- Contributed to a multi-robot collaboration architecture for Baxter and PR2 robot platforms.
- Mentored 2 MS students, 2 senior project teams and 2 NSF funded REU students.
- Maintained robot (PR2, Baxter and Pioneer-3DX) hardware and relevant ROS packages.
- Active involvement with [STEM](#) outreach activities are part of my work in the lab.
- Taught Principles of Computer Operating Systems at undergraduate and graduate levels in Fall 2019.

Tesla, Inc., Palo Alto, CA

Firmware Validation Intern

MAY - AUG 2018

- Performed system validation (regression testing) on Model S/X/3 by utilizing robot framework and python.
- Responsible for system integration of HIL-based dynamometer test bed for Model X/3 to facilitate validation of level 4 autonomy.
- Driven by curiosity, gained knowledge of how a combination of hardware and software/firmware can enable safety-critical validation of autonomous vehicles.

RunwayLABZ, Rajam, India

Co-founder, CEO

MAR 2015 - MAY 2018

- Bootstrapped an IoT-based smart home products company, played an important role in merger with [AntarIoT](#).
- Lead the team remotely by playing the role of a product architect, exposing the organization to appropriate protocols and technologies like MQTT and ASR from Google, Alexa.
- Started with a team of 3 and one product, the company now grew to a team of 25 to 30 employees with a portfolio of 10 smart home products.

IEM Corporation, Troy, NY

Jr. Engineer

JUL - DEC 2015

Electrical Intern

MAY - AUG 2014, FEB - MAY 2015

- Conducted Research and Development on Acoustic Bearing project and evaluated various hardware that goes into the production of the system.
- Developed a portion of embedded software on Maxwell PXA166 (TS-7250-V2) to trigger a series of cameras at real-time for Wheel Flat Controller, conducted both white and black box testing on the Wheel Flat System.
- Developed Geophone sensor based analog data acquisition solution utilizing a PIC32MZ and ADS1282.
- Developed a wheel sensor with LDC1614 and MSP430, which can sense the presence of rail wheel.
- Assisted various R&D projects by evaluating new sensors like DT-35, MLX90620/1 and other thermal sensors, responsible for test bed setups for different projects.

NYU Tandon School of Engineering, Brooklyn, NY

Graduate Assistant

SEP 2013 - MAY 2014

- Tested and debugged EEG, ECoG boards and designed PCBs in Medical Devices lab during Spring 2014.
- Conducted theoretical research on Human Motor Control in Controls and Networks lab during Fall 2013.

Robotica Adventures Studio, Visakhapatnam, INDIA

Technical Associate

DEC 2012 - JUN 2013

- Taught Robotics hands-on courses for freshmen and high school students.
- Developed a new hands-on robotics course utilizing a flowchart-based drag and drop programming interface.

EXTRACURRICULAR ACTIVITIES

UNR Badminton Club at UNIVERSITY OF NEVADA, Reno, NV

President

AUG 2018 - AUG 2019

Vice President

AUG 2019 - MAY 2020

- Started badminton club, managed a Facebook group for 60-members, organized play-sessions and events.

- Lead negotiations with Wiegand Fitness Center to get required equipment thereby sparing club reserves, which were later utilized for club socials.

Leadership Cell at AITAM, Tekkali, India

Core Member

MAY 2011 - MAY 2012

- Started robotics club at AITAM, Tekkali as part of Leadership cell, a WIPRO Mission 10X initiation.
- Organized and conducted three hands-on workshops on Robotics for under graduate students.

SCHOLARSHIPS AND AWARDS

Finalist of Sontag Entrepreneurship Competition 2018, out of 58 Teams (Results)	APRIL 2018
3rd Place in Abby Pitch Awards of Sontag Entrepreneurship Competition 2018	APRIL 2018
AAAI Fall symposium travel grant	NOVEMBER 2016
Won Reno Hackathon organized by Microsoft in the Internet of Things category	APRIL 2016
International student award - OISS UNR	APRIL 2016
Merit based scholarship at NYU Tandon School of Engineering	AUGUST 2013
Best senior project class of 2012	MAY 2012
Travel grants and Incentives to compete in tech symposiums (UG college)	2008 - 2012
Won prizes at tech symposiums organized by top Indian universities	2008 - 2012

PUBLICATIONS

1. Ryan Blake Jackson*, Sihui Li*, Santosh Balajee Banisetty, Sriram Siva, Hao Zhang, Neil Dantam, and Tom Williams. "An Integrated Approach to Context-Sensitive Moral Cognition in Robot Cognitive Architectures." Submitted to IEEE/RSJ International Conference on Intelligent Robots and Systems, Prague, Czech Republic, Oct 2021.
2. Santosh Balajee Banisetty, Vineeth Rajamohan, Fausto Vega, and David Feil-Seifer. "A Deep Learning Approach to Unified Socially-Aware Navigation." Submitted to IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), Vancouver, Canada Sep 2021.
3. Santosh Balajee Banisetty, Roya Salek Shahrezaie, Thomas Williams, and David Feil-Seifer. "A Survey: Proxemics, Socially-Aware Navigation and Everything In-between." Submitting to ACM Transactions on Human-Robot Interaction (THRI), 2021.
4. Santosh Balajee Banisetty, and Thomas Williams. "Implicit Communication Through Social Distancing: Can Social Navigation Communicate Social Distancing?." Companion ACM/IEEE International Conference on Human-Robot Interaction, Boulder, CO Mar 2021.
5. Chloe McCaffrey, Alexander Taylor, Sayanti Roy, Santosh Balajee Banisetty, Ross Mead, and Thomas Williams. "Can Robots Be Used to Encourage Social Distancing?." Companion ACM/IEEE International Conference on Human-Robot Interaction, Boulder, CO Mar 2021.
6. Roya Salek Shahrezaie*, Santosh Balajee Banisetty*, and David Feil-Seifer. "Towards Deep Reasoning on Social Rules for Socially Aware Navigation." Companion ACM/IEEE International Conference on Human-Robot Interaction, Boulder, CO Mar 2021.
7. AnaLisa Honour, Santosh Balajee Banisetty, and David Feil-Seifer. "Perceived Social Intelligence as Evaluate of Socially Navigation." Companion ACM/IEEE International Conference on Human-Robot Interaction, Boulder, CO Mar 2021.
8. Santosh Balajee Banisetty, Scott Forer, Logan Yliniemi, Monica Nicolescu, and David Feil-Seifer. "Socially-Aware Navigation: A Non-Linear Multi-Objective Optimization Approach." (In Press) ACM Transactions on Interactive Intelligent Systems (TIIS), 2021.
9. Kimberly A Barchard, Leiszle Lapping-Carr, R. Shane Westfall, Andrea Fink-Armold, Santosh Balajee Banisetty and David Feil-Seifer. "Measuring the Perceived Social Intelligence of Robots." ACM Transactions on Human-Robot Interaction (THRI), 2020.
10. Monica Nicolescu, Natalie Arnold, Janelle Blankenburg, David Feil-Seifer, Santosh Balajee Banisetty, Mircea

Nicolescu, Andrew Palmer, and Thor Monteverde. "Learning of Complex-Structured Tasks from Verbal Instruction." IEEE-RAS International Conference on Humanoid Robots, Toronto, CAN, Oct 2019.

11. Santosh Balajee Banisetty, and David Feil-Seifer. "Towards a Unified Planner For Socially-Aware Navigation." in AAAI Fall symposium series, Arlington VA, 18-20 Oct 2018.
12. Scott Forer, Santosh Balajee Banisetty, and David Feil-Seifer. "A Multi-Objective Approach to Socially Aware Navigation." in IEEE/RSJ International Conference on Intelligent Robots and Systems, Madrid, Spain, Oct 2018.
13. Janelle Blankenburg, Santosh Balajee Banisetty, S. Pourya Hoseini Alinodehi, Luke Fraser, David Feil-Seifer, Monica Nicolescu, and Mircea Nicolescu. "A Distributed Control Architecture for collaborative Multi-Robot Task Allocation." in IEEE-RAS International Conference on Humanoid Robots, Birmingham, UK, Nov 2017.
14. Meera Sebastian*, Santosh Balajee Banisetty*, and David Feil-Seifer. "Socially-Aware Navigation Planner Using Models of Human-Human Interaction." In IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), Libson, Portugal, Aug 2017.
15. Santosh Balajee Banisetty, Meera Sebastian, and David Feil-Seifer. "Socially-Aware Navigation: Action Discrimination to Select Appropriate Behavior." in AAAI Fall symposium series, Arlington VA, 17-19 Nov 2016.

*Both authors contributed equally.

POSTERS AND TECH REPORTS

1. Fausto Vega, Santosh Balajee Banisetty, and David Feil-Seifer. "Validation of a PaCcET Socially-Aware Navigation Planner." Poster in ScholarWorks, University of Nevada Reno, 2019.
2. Analisa Honour, Santosh Balajee Banisetty, and David Feil-Seifer. "The Perceived Social Intelligence of Robots with Socially-Aware Navigation." Poster in ScholarWorks, University of Nevada Reno, 2019.
3. Kimberly Barchard, Leiszle Lapping-Carr, Shane Westfall, Santosh Balajee Banisetty, and David Feil-Seifer. "Measuring 20 aspects of the perceived social intelligence of robots." Poster Paper in IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Madrid, Spain, Oct 2018.
4. Kimberly Barchard, Leiszle Lapping-Carr, Shane Westfall, Santosh Balajee Banisetty, and David Feil-Seifer. "Perceived Social Intelligence (PSI) Scales test manual. Unpublished psychological test and test manual. Observer report of 20 aspects of social intelligence of robots, with four items per scale." Technical Report, Aug 2018.
5. Santosh Balajee Banisetty, Meera Sebastian, and David Feil-Seifer. "Socially-Aware Navigation: Action Discrimination To Select Appropriate Behavior." Poster in Annual Graduate Poster Symposium (GSA), Nov 2016.

ACADEMIC SERVICE

Reviewed Papers for Professional Journals and Conferences:

- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- International Conference on Humanoid Robots (Humanoids)
- Cognitive Systems Research (COGSYS)
- International Journal of Social Robotics (SORO)
- ACM/IEEE International Conference on Human Robot Interaction (HRI)
- IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)
- International Conference on Social Robotics (ICSR)
- Conference on Robot Learning (CoRL)
- AAAI Artificial Intelligence for Human-Robot Interaction