

EDUCATION

- **Georgia Institute of Technology** Atlanta, GA
Ph.D. in Robotics Aug 2019 - Present
- **Northeastern University** Boston, MA
Bachelor of Science in Computer Engineering, Minor in Mathematics; Magna Cum Laude May 2019

RESEARCH EXPERIENCE

- **Graduate Research Assistant** Atlanta, GA
With Prof. Dhruv Batra, Machine Learning & Perception Lab / Prof. Sonia Chernova, RAIL Lab Aug 2019 - Present
 - Investigating low-shot domain-transfer (Sim2Real).
- **Research Assistant** Boston, MA
With Prof. Taskin Padir, Northeastern University Robotics and Intelligent Vehicles Research (RIVeR) Lab Jul 2018 - Jul 2019
 - Represented Northeastern's team in the 2019 RoboCup@Home Competition in Sydney, Australia. Advanced robot's capabilities for face recognition, person tracking, gesture recognition, person description, age/gender classification, and naturalistic robot-human communication.
 - Developed a pipeline for complex use of state-of-the-art technologies, including object recognition and robotic manipulation in dynamic environments for the 2018 World Robot Competition in Tokyo, Japan.
 - Participated in the Toyota Research Institute Human Support Robot University Challenges which focused on pick-and-place tasks in cluttered environments. Achieved fastest successful completion time against teams from MIT, Stanford, U.C. Berkeley, and University of Michigan.
 - Implemented MaskRCNN using TensorFlow and Keras for object detection and object segmentation.
 - Used Caffe to implement one shot learning for semantic segmentation (OSLSM) for detecting unknown objects.
 - Created scripts in Python to automate generating training data and COCO style annotations for use in MaskRCNN.
- **Research Assistant** Boston, MA
With Prof. Hanumaant Singh, Northeastern University Field Robotics Lab Jan - Jul 2018
 - Studied various machine learning classification algorithms and assisted in developing a model to classify endangered fish found near the ocean floor using TensorFlow.
- **Research Experience for Undergraduates (REU)** Worcester, MA
Worcester Polytechnic Institute of Technology (WPI) Jun - Aug 2015
 - Investigated the use smart structural control dampers to mitigate structural damage on bridge piers due to high impact loads.
 - Optimized location placement of magnetorheological dampers for acceleration and displacement response reduction.

HONORS AND AWARDS

- **National Science Foundation (NSF) Graduate Research Fellowship** 2020-23
- **Huntington 100** 2019
Honors a total of 100 out of 32,000+ undergraduate & graduate students for outstanding achievements that serve as an "incredible testament to the high ambition and achievement found in the Northeastern student body".
- **ECE Capstone 2nd Place Autonomous Visual Navigation and Mapping Search and Rescue Drone** 2019
Senior design research project, 2nd place out of 100+ ECE students
- **HackMIT "Best NativeScript App for IoT" Winner** 2016
Hackathon competition at MIT among 1000 undergraduate students from around the world.
- **Henry C. Jones Scholarship** 2016-19
Recognizes and rewards deserving students in the College of Engineering with academic promise and financial need.
- **Excellence Scholarship** 2014-19
Prestigious scholarship awarded to top 25% of Northeastern applicants to help fund tuition for 5 years.
- **Dean's List** 2014-19

INDUSTRY EXPERIENCE

- **Square Robot** Boston, MA
Software Engineer Co-op *Jul 2018 - Aug 2019*
 - Developed image processing algorithms for underwater 3D object reconstruction using laser line scanning.
 - Processed incoming camera feed in ROS using C++ and OpenCV to detect a light source and calculated desired poses between multiple coordinate frames using odometry data to command thrusters for homing vehicle.
 - Created a ROS driver node in C++ to communicate with a Pulsed Eddy Current (PEC) sensor for corrosion detection and built a simulator using Gazebo for visualization of corrosive areas.
- **NextDroid Robotics** Boston, MA
Electrical & Software Engineer Co-op *May 2017 - Apr 2018*
 - Used OpenCV and Python to implement inverse perspective mapping transformations for lane detection.
 - Developed a map visualization tool in Python to compare localizations from different lane detections systems.
 - Created a web app for real-time visualization of sensor data from Particle Photon using Ruby on Rails.
 - Added map filtering features to UI that interfaced with an underwater vehicle using JavaScript.
 - Built a web app to receive and display real-time RTI DDS status messages from vehicle using Flask.
 - Integrated configuration options with the onboard processor and peripheral controller to correct for hard iron and soft iron distortions in the AHRS using Python, MATLAB, and C++.
 - Debugged Iridium and GPS comms by designing and running tests to monitor signal quality and SNR values.
- **Boston Engineering** Waltham, MA
Electrical Engineer Co-op *Jun - Dec 2016*
 - Drew schematics and layouts using OrCAD, PADS, and Altium for an underwater antifouling system.
 - Designed a module incorporating various ICs responsible for battery management, DC/DC conversion, and power consumption monitoring.
 - Built a GUI with Qt to control PTZ cameras and display live stream output by sending HTTP GET requests.

PUBLICATIONS

- A.Kadian*, **J. Truong***, A.Gokaslan, A.Clegg, E.Wijmans, S.Lee, M.Savva, S.Chernova, D.Batra “Are We Making Real Progress in Simulated Environments? Measuring the Sim2Real Gap in Embodied Visual Navigation” *arXiv preprint arxiv:1912.06321, 2019.*
- T.Keletemur, N.Yokoyama, **J. Truong**, A.A.Allaban, and T.Padir, “System Architecture for Autonomous Mobile Manipulation of Everyday Objects in Domestic Environments” in *Proceedings of the ACM International Conferences on PErvasive Technologies Related to Assistive Environments 2019*

POSTER PRESENTATIONS

- **J. Truong**, N. Yokoyama, T. Keletemur, and T. Padir, “FRASIER: Fostering Resilient Aging with Self-Efficacy and Independence Enabling Robot,” Poster presented at the 2019 RoboCup@Home Competition in Sydney, Australia.
- **J. Truong** and J. E. Hughes, “MR damper location optimization for the mitigation of structural damage due to high-impact loads,” Poster presented at a symposium at Worcester Polytechnic Institute of Technology (WPI).

TEACHING EXPERIENCE

- **EECE 2560 Fundamentals of Engineering Algorithms** 2017-19
College of Engineering Upperclassman Tutor
- **EECE 2412 Fundamentals of Electronics** 2017-19
College of Engineering Upperclassman Tutor
- **EECE 2540 Fundamentals of Networks** 2017-19
College of Engineering Upperclassman Tutor
- **EECE 2150 Circuits & Signals: Biomedical Applications** 2016-19
Eta Kappa Nu Tutor

LEADERSHIP & INVOLVEMENT

Eta Kappa Nu Honor Society

International honor society of the Institute of Electrical and Electronics Engineers (IEEE)

2016-19

Society of Asian Scientists and Engineers

Secretary, Programs Chair, 2016 SASE Regional Conference Logistics and Finance Subcommittee

2016-19