Kevin Doherty

CONTACT INFORMATION

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RESEARCH INTERESTS

My interests lie broadly in autonomous robotics and machine learning, especially high-level autonomy, statistical inference, planning, and exploration.

EDUCATION

Stevens Institute of Technology, Hoboken, New Jersey

B.Eng. with Thesis, Electrical Engineering, expected May, 2017. GPA: 3.97 / 4.0
Minor in Computer Science
GRE: 169 Q / 167 V / 5.5 W

REFEREED PUBLICATIONS

K. Doherty, J. Wang, and B. Englot, "Bayesian Generalized Kernel Inference for Occupancy Map Prediction", *IEEE International Conference on Robotics and Automation (ICRA)*, to appear May 2017.

K. Doherty, J. Wang, and B. Englot, "Probabilistic Map Fusion for Fast, Incremental Occupancy Mapping with 3D Hilbert Maps", *IEEE International Conference on Robotics and Automation (ICRA)*, 8 pp., May 16-21, 2016.

S. Bai, J. Wang, K. Doherty, and B. Englot. "Inference-Enabled Information-Theoretic Exploration of Continuous Action Spaces", *The International Symposium on Robotics Research (ISRR)*, September 12-15, 2015.

OTHER PUBLICATIONS

K. Doherty, J. Wang, and B. Englot, "Bayesian Learning with Generalized Kernels for Occupancy Map Prediction", *IEEE MIT Undergraduate Research Technology Conference*, Poster. November 4-6, 2016.

PROFESSIONAL ACTIVITIES

Reviewer for *IEEE Robotics and Automation Letters (RA-L) / IEEE International Conference on Robotics and Automation (ICRA)* 2017

PROFESSIONAL EXPERIENCE

MIT Lincoln Laboratory, Lexington, Massachusetts USA

Summer Research Intern **June, 2016 - August, 2016**

Developed algorithms for semantic map filtering and object localization with application to search using lightweight UAVs and UUVs. Integrated algorithms into a SLAM system with the goal of enhancing situational awareness for a user via a heads-up display.

Robust Field Autonomy Lab, Stevens Institute of Technology, Hoboken, New Jersey USA

Undergraduate Research Assistant **May, 2015 - Present**

Studied autonomous robotics with specific interest in the problems of mapping and exploration. Investigated techniques to reduce the number of steps needed to completely explore an environment. Developed a method to enable fusion of several inferred local maps computed using different models. Current work is focused on the application of new machine learning algorithms to map inference.

Cizr Tennis www.cizr.com, Austin, Texas USA

Part-time Software Engineering Intern **December, 2014 - Present**

Back- and front-end development for a tennis video annotation and editing platform. Built several

features currently in production for uploading matches, saving match events, and generating and sharing highlight reels.

Resolute Innovation `www.resoluteinnovation.com`, New York City, New York USA

Part-time Software Engineering Intern **December, 2014 - June, 2016**
Prototyped web crawlers and parsers for the backend of a university tech-transfer search engine. Built support for user accounts and saved documents. Studied techniques for machine learning-assisted expert data curation.

Sensorimotor Control Lab, Stevens Institute of Technology, Hoboken, New Jersey USA

Undergraduate Research Assistant **December, 2013 - August, 2014**
Studied applications of machine learning to Human-Machine Interfaces for control of upper-limb prostheses. Performed grasp classification and real-time control of a hand exoskeleton.

Honors and Awards

IEEE Robotics and Automation Society ICRA Travel Grant. 2017.

1st Place, Stevens Institute of Technology CS Club Github API CodeJam, for a recommender system based on collaborative filtering. 2016.

ICFNJ Research Symposium Grant, in support of undergraduate research on underwater robotics. 2015.

1st Place, Stevens Institute of Technology ECE Department Big Data Competition, for sentiment analysis of TripAdvisor reviews. 2015.

Anne P. Neupauer Scholarship, a four year, full-tuition merit scholarship granted by Stevens Institute of Technology. 2013-2017.

Computer Skills

Languages:

- Professional experience: Python, Scala, C++, Java, Coffeescript/Javascript, HTML, CSS
- Some experience: LaTeX, MATLAB, Bash scripting

Tools:
ROS, Gazebo, PCL, OpenCV, Git, Jenkins CI

Other Activities

IEEE Robotics and Automation Society (RAS), Tau Beta Pi (TBP) Honor Society, Eta Kappa Nu (HKN) Honor Society, PADI SCUBA Diver

Relevant Coursework

Advanced Robotics (Graduate), Computer Vision (Graduate), Machine Learning (Graduate), 3D Computer Vision (Graduate), Introduction to Robotics (Graduate), Artificial Intelligence (Graduate)