

Benjamin Stoler

Curriculum Vitae

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EDUCATION

Carnegie Mellon University | Pittsburgh, PA August 2021 – Present

Doctor of Philosophy in Computer Science

Research Area: Social Robot Navigation

Advisor: Dr. Jean Oh

University of Michigan | Ann Arbor, MI September 2019 – April 2020

Master of Science in Engineering in Computer Science

GPA: 4.00/4.00

University of Michigan | Ann Arbor, MI September 2016 – May 2019

Bachelor of Science in Engineering in Computer Science

GPA: 3.99/4.00

Minor in Multidisciplinary Design

RESEARCH PROJECTS

Carnegie Mellon University BIG Lab | Pittsburgh, PA

T2FPV

June 2022 – Present

- Creating method for constructing high-fidelity first-person view datasets from top-down trajectory data and performing human path prediction experiments with realistic perception therein
- Leveraging Unity for scene recreation and deep generative modeling approaches for multi-modal, variational predictions
- Collaborating with research groups at both Carnegie Mellon University and Yale University to develop benchmarking challenge as part of a workshop proposal

TrajAir

August 2021 – May 2022

- Developed methods for navigating and predicting aircraft trajectories in non-towered airspace
- Applied clustering and vector field approaches to capture movement patterns and recognize intent

University of Michigan EFES Lab | Ann Arbor, MI

Agamotto

September 2019 – May 2020

- Designed and constructed a system to find persistent memory bugs in applications by utilizing symbolic execution and an augmented symbolic memory model
- Led the investigation and experimentation on Oracle's NVM Direct framework during evaluation, resulting in 23 new bugs communicated to its authors

PROFESSIONAL EXPERIENCE

Johns Hopkins University Applied Physics Lab | Laurel, MD & Remote September 2020 – May 2022

Associate Professional Staff – Robotics Research Group

- Created policy-agnostic metrics for measuring similarity between MDPs and improved resulting transfer performance in GridWorld environments
- Developed an open-source benchmark for studying transfer and meta learning in 2D arcade settings
- Architected containerized infrastructure for a hybrid-intelligent, multi-agent system, used by both external performers and internal APL developers
- Designed foundational AI software for logging and metrics, optimized for end-to-end workflows within a distributed environment

Amazon Web Services | Seattle, WA

June 2019 – August 2019

Software Development Engineer Intern

- Designed and implemented the expansion of an internal portal for the AWS Commerce Platform organization, enabling querying of invoices based on arbitrary constraints
- Created a highly extensible automated data-flow pipeline, duplicating and transforming DynamoDB NoSQL data-sources to Redshift SQL without requiring any manual configuration or mapping of the items therein

JPMorgan Chase & Co. | Ann Arbor, MI & Jersey City, NJ

January 2018 – December 2018

Student Software Engineer – Multidisciplinary Design Program

- Developed and deployed a web-based, real-time batch monitoring dashboard, following the design-thinking process, consisting partly of user interviews, paper prototypes, and quality assurance testing
- Collaborated with a team comprising six students from various disciplines, University of Michigan faculty sponsors, and JPMorgan Chase sponsors through a year-long project, including an on-site internship at JPMorgan
- Led the coordination of product demonstrations from external vendors in order to formally analyze and present potential technology choices to internal management, as well as implemented full-stack features in Angular and Spring

TEACHING EXPERIENCE

University of Michigan | Ann Arbor, MI

January 2020 – April 2020

Graduate Student Instructor – Introduction to Computer Security

- Developed project structure and specifications for undergraduate computer security course
- Led coordination of weekly discussion materials, ensuring useful and consistent content between nine other TAs

PUBLICATIONS

- Patrikar, J., Dantas, J., Ghosh, S., Kapoor, P., Higgins, I., Aloor, J.J., Navarro, I., Sun, J., **Stoler, B.**, Hamidi, M. and Bajjal, R., 2022. Challenges in Close-Proximity Safe and Seamless Operation of Manned and Unmanned Aircraft in Shared Airspace. In *Aerial Robotics Workshop ICRA 2022*.
- Staley, E.W., Ashcraft, C., **Stoler, B.**, Markowitz, J., Vallabha, G., Ratto, C. and Katyal, K.D., 2021. Meta Arcade: A Configurable Environment Suite for Meta-Learning. In *Deep RL Workshop NeurIPS 2021*.
- Neal, I., Reeves, B., **Stoler, B.**, Quinn, A., Kwon, Y., Peter, S. and Kasikci, B., 2020. AGAMOTTO: How Persistent is your Persistent Memory Application?. In *14th USENIX Symposium on Operating Systems Design and Implementation (OSDI 20)* (pp. 1047-1064).

HONORS AND AWARDS

IEEE Micro Top Picks Honorable Mention	2021
William L. Everitt Student Award of Excellence	2019
James B. Angell Scholar	2018-2019
William J. Branstrom Freshman Prize	2017