Matthew Beveridge

Boston, MA

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Current Position

NODAR, Inc. — Somerville, MA
Computer Vision Engineer — *Jul 2021 - Present*

Education

Massachusetts Institute of Technology (MIT) — Cambridge, MA
Master of Engineering (MEng); Electrical Engineering and Computer Science (Artificial Intelligence) — *2021*

Massachusetts Institute of Technology (MIT) — Cambridge, MA
Bachelor of Science (SB); Electrical Engineering and Computer Science — *2020*
Bachelor of Science (SB); Mathematics

Research Experience

Distributed Robotics Lab — CSAIL, MIT
Graduate Researcher — *Sep 2020 - Jun 2021*

Draper Lab — Cambridge, MA
Machine Learning Researcher — *Jun 2020 - Aug 2020*

Data-Driven Inference Group — CSAIL, MIT
Undergraduate Researcher — *Sep 2019 - May 2020*

NASA — Houston, TX
Research Engineer — *Jun 2020 - Aug 2020*

Camera Culture Group — Media Lab, MIT
Undergraduate Researcher — *Sep 2018 - Feb 2019*

Interactive Robotics Group — CSAIL, MIT
Undergraduate Researcher — *Feb 2017 - May 2017*

Industry Experience

General Atomics ASI — San Diego, CA
Machine Learning Engineer — *Jun 2018 - Aug 2018*

nference, Inc. — Cambridge, MA
Data Scientist — *Feb 2018 - Jun 2018*

Mosaic Power — Frederick, MD
Software Engineer — *Jun 2017 - Aug 2017*

Teaching Experience and Service

MIT 6.862: Applied Machine Learning — EECS, MIT
Teaching Assistant — *Sep 2020 - Jun 2021*

MIT 6.036: Introduction to Machine Learning — EECS, MIT
Teaching Assistant — *Sep 2020 - Dec 2020*

MIT Driverless — Cambridge, MA
Team Lead, Member — *Aug 2020 - Jul 2021*

MIT EnergyHack — Cambridge, MA
Director of Corporate Relations — *Jun 2019 - May 2020*

Key Skills

Programming: Python; Julia; Java; R; SQL; C++; Git; Unix; HTML/JS/CSS; PyTorch; Tensorflow; Drake; ROS.

Machine Learning: Deep Learning including CNNs, RNNs, GANs, Transformers, and VAEs; Machine Learning including SVM, KNN, Decision Trees, Bayes, and AutoML.; Federated Learning including attacks and defenses.

Computer Vision: OpenCV; SfM/MVS; SLAM; Calibration; Multi-sensor arrays; RGB, LWIR, and LiDAR sensors.

Mathematics: Numerical Analysis; Information Theory; Graph and Combinatorial Theory; Optimization; Statistics and Probability; Stochastic Processes; Algorithms; Linear Algebra and Differential Equations.

Selected Publications

Preprints and Papers Under Review

6. Alexander Siemenn, Evyatar Shaulsky, Matthew Beveridge, Tonio Buonassisi, Sara Hashmi, Iddo Drori. Multiscale Bayesian Optimization of Jetted Droplets. 2021.

5. Woonghee Han, Randall Pietersen, Rafael Villamor Lora, Matthew Beveridge, Earl Marmar, Jim Terry, Iddo Drori. Tracking Blobs in Images of Turbulent Edge of Tokamak Plasma. 2021.

4. Samuel Humphries, Madeleine Jansson, Young Ryu, Matthew Beveridge, Melody Cao, Iddo Drori. Predicting Wildfire Growth. 2021.

3. Kyle Lennon, Katharina Fransen, Alexander O'Brien, Yumeng Cao, Matthew Beveridge, Yamin Arefeen, Nikhil Singh, Iddo Drori. Image2Lego: Customized LEGO® Set Generation from Images. 2021.

2. Alexander E. Siemenn, Matthew Beveridge, Tonio Buonassisi, Iddo Drori. Online Preconditioning of Experimental Inkjet Hardware by Bayesian Optimization in Loop. 2021.

1. Jared M. Cochrane, Matthew Beveridge, Iddo Drori. Generalizing Imaging Through Scattering Media With Uncertainty Estimates. 2021.

Peer-Reviewed Publications

6. Glenn Liu, Peidong Wang, Matthew Beveridge, Young-Oh Kwon, Iddo Drori. Predicting Atlantic Multidecadal Variability. Neural Information Processing Systems (**NeurIPS**) Workshop on Tackling Climate Change with Machine Learning, 2021. *Oral spotlight.*

5. Ellen Park, Jae Deok Kim, Nadege Aoki, Melody Cao, Yamin Arefeen, Matthew Beveridge, Roo Nicholson, Iddo Drori. Predicting Critical Biogeochemistry of the Southern Ocean. Neural Information Processing Systems (**NeurIPS**) Workshop on Tackling Climate Change with Machine Learning, 2021.

4. Evyatar Shaulsky, Alexander Siemenn, Matthew Beveridge, Tonio Buonassisi, Iddo Drori, Sara Hashmi. Artificial Intelligence Enhances Control Parameter Space Investigation in Flow-Focusing Droplet Generation. 95$^{\text{th}}$ **ACS Colloids and Surface** Symposium, 2021.

3. Woonghee Han, Nicola Offeddu, Theodore Golfinopoulos, Christian Theiler, Cedric Tsui, Jose Boedo, Jim Terry, Earl Marmar, Randall Pietersen, Rafael Villamor Lora, Matthew Beveridge, Iddo Drori. Exploring the Edge/SOL Fluctuations in Negative Triangularity Plasmas on TCV. 63$^{\text{rd}}$ Annual Meeting of the **American Physical Society Division of Plasma Physics**, 2021.

2. Sarah Mokhtar, Matthew Beveridge, Melody Cao, Iddo Drori. Pedestrian Wind Factor Estimation in Complex Urban Environments. Asian Conference on Machine Learning (**ACML**), 2021.

1. Nikhil Singh, Jeff Mentch, Jerry Ng, Matthew Beveridge, Iddo Drori. Image2Reverb: Cross-Modal Reverb Impulse Response Synthesis. IEEE/CVF International Conference on Computer Vision (**ICCV**), 2021.

Theses

1. Matthew Beveridge. Consistent Depth Estimation in Data-Driven Simulation for Autonomous Driving. Master's Thesis, **MIT**, 2021.

Software

1. Matthew Beveridge. *finpandas*: A Pythonic interface and analysis toolkit for fundamental financial information. **MIT License**, 2021.