

Matthew Beveridge

PhD Student in Computational Imaging
Columbia University

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Education

Columbia University

PhD in Computer Science; Advised by Shree Nayar 2023 - present

Massachusetts Institute of Technology

MEng in EECS; Advised by Daniela Rus 2020 - 2021

BS in Mathematics and EECS; Minor in Theater Arts 2016 - 2020

Academic Positions

Columbia University

Graduate Researcher; Advised by Shree Nayar Sep 2023 - present

LEAP Momentum Fellow; Co-advised by Kara Lamb and Carl Vondrick Jun 2023 - Aug 2023

University of Colorado Boulder

Research Affiliate; Advised by Morteza Karimzadeh May 2023 - Sep 2023

Massachusetts Institute of Technology

Graduate Researcher; Advised by Daniela Rus Sep 2020 - Jun 2021

Undergraduate Researcher; Advised by John Guttag Sep 2019 - May 2020

Undergraduate Researcher; Advised by Ramesh Raskar Sep 2018 - Feb 2019

Undergraduate Researcher; Advised by Julie Shah Feb 2017 - May 2017

Industry Experience

Computer Vision Engineer, **Nodar Inc.** Jul 2021 - Aug 2023

Machine Learning Researcher (Internship), **Draper Labs**; Hosted by Rebecca Russell Summer 2020

Research Engineer (Internship), **NASA Johnson Space Center** Summer 2019

Computer Vision Researcher (Internship), **General Atomics ASI** Summer 2018

Data Scientist (Internship), **nference Inc.** Spring 2018

Software Engineer (Internship), **Mosaic Power** Summer 2017

Teaching and Mentorship

Teaching Assistant

Columbia University COMS 6732: Computational Imaging Spring 2024

Columbia University COMS 4731: Computer Vision I – First Principles Fall 2023

MIT 6.862: Applied Machine Learning Fall 2020, Spring 2021

MIT 6.036: Introduction to Machine Learning Fall 2020

Mentorship

Megan Ngo (MIT → Apple) Jan 2022 - Feb 2022

Honors and Awards

Greenwoods Fellowship, Columbia University 2023

Momentum Fellowship, Columbia University LEAP 2023

Top 100 [Paper] in Physics, Scientific Reports 2022

Best Paper: Pathway to Impact, NeurIPS (CCAI Workshop) 2021

NEWMAC Academic All-Conference 2017

Northrop Grumman Engineering Scholar 2016

Society of American Military Engineers Scholar 2016, 2017

US Lacrosse Academic All-American 2016

National Football Foundation Scholar Athlete 2016

Selected Publications

Journal Publications

2. Woonghee Han, Randall A Pietersen, Rafael Villamor-Lora, [Matthew Beveridge](#), Nicola Offeddu, Theodore Golfopoulos, Christian Theiler, James L Terry, Earl S Marmar, Iddo Drori. "Tracking Blobs in the Turbulent Edge Plasma of a Tokamak Fusion Device". In: *Scientific Reports* 12.1 (2022). *Top 100 in Physics (ranked #37) for 2022*, p. 18142. [[link](#)]
1. Alexander E Siemenn, Evyatar Shaulsky, [Matthew Beveridge](#), Tonio Buonassisi, Sara M Hashmi, Iddo Drori. "A Machine Learning and Computer Vision Approach to Rapidly Optimize Multiscale Droplet Generation". In: *ACS Applied Materials & Interfaces* 14.3 (2022), pp. 4668–4679. [[link](#)]

Conference Publications

3. Sarah Mokhtar, [Matthew Beveridge](#), Melody Cao, Iddo Drori. "Pedestrian Wind Factor Estimation in Complex Urban Environments". In: *Asian Conference on Machine Learning (ACML)*. *Oral spotlight*. 2021. [[link](#)]
2. Nikhil Singh, Jeff Mentch, Jerry Ng, [Matthew Beveridge](#), Iddo Drori. "Image2Reverb: Cross-Modal Reverb Impulse Response Synthesis". In: *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*. 2021, pp. 286–295. [[link](#)]
1. Woonghee Han, Nicola Offeddu, Theodore Golfopoulos, 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". in: *American Physical Society Division of Plasma Physics*. 2021

Workshop and Symposium Publications

5. [Matthew Beveridge](#), Lucas Pereira. "Interpretable Spatiotemporal Forecasting of Arctic Sea Ice Concentration at Seasonal Lead Times". In: *NeurIPS Workshop on Tackling Climate Change with Machine Learning*. 2022. [[link](#)]
4. Jared M. Cochrane, [Matthew Beveridge](#), Iddo Drori. "Generalizing imaging through scattering media with uncertainty estimates". In: *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) Workshops*. 2022, pp. 760–766. [[link](#)]
3. Glenn Liu, Peidong Wang, [Matthew Beveridge](#), Young-Oh Kwon, Iddo Drori. "Predicting Atlantic Multidecadal Variability". In: *NeurIPS Workshop on Tackling Climate Change with Machine Learning*. *Best paper, oral spotlight*. 2021. [[link](#)]
2. Ellen Park, Jae Deok Kim, Nadege Aoki, Yumeng Melody Cao, Yamin Arefeen, [Matthew Beveridge](#), David Nicholson, Iddo Drori. "Predicting Critical Biogeochemistry of the Southern Ocean for Climate Monitoring". In: *NeurIPS Workshop on Tackling Climate Change with Machine Learning*. 2021. [[link](#)]
1. Evyatar Shaulsky, Alexander Siemenn, [Matthew Beveridge](#), Tonio Buonassisi, Iddo Drori, Sara Hashmi. "Artificial Intelligence Enhances Control Parameter Space Investigation in Flow-Focusing Droplet Generation". In: *ACS Colloids and Surface Symposium*. 2021

Patents

1. Piotr Swierczynski, Leaf Alden Jiang, [Matthew Beveridge](#). "3D Vision System with Automatically Calibrated Stereo Vision Sensors and Lidar Sensor". US Patent 11782145. 2023

Theses

1. [Matthew Beveridge](#). "Consistent Depth Estimation in Data-Driven Simulation for Autonomous Driving". Master's thesis. Massachusetts Institute of Technology, 2021. [[link](#)]

Preprints

2. Alexander E Siemenn, [Matthew Beveridge](#), Tonio Buonassisi, Iddo Drori. "Online Preconditioning of Experimental Inkjet Hardware by Bayesian Optimization in Loop". In: *arXiv preprint arXiv:2105.02858* (2021). [[link](#)]
1. Kyle Lennon, Katharina Fransen, Alexander O'Brien, Yumeng Cao, [Matthew Beveridge](#), Yamin Arefeen, Nikhil Singh, Iddo Drori. "Image2lego: Customized lego set generation from images". In: *arXiv preprint arXiv:2108.08477* (2021). [[link](#)]

Service

Refereeing

Conference on Computer Vision and Pattern Recognition (CVPR)	2022 - present
International Conference on Computer Vision (ICCV)	2023 - present
European Conference on Computer Vision (ECCV)	2022 - present
Winter Conference on Applications of Computer Vision (WACV)	2023 - present
International Conference on 3D Vision (3DV)	2022 - present
Asian Conference on Computer Vision (ACCV)	2024 - present

Outreach

MIT Driverless, Simulation Team Lead	Aug 2020 - Jul 2021
MIT EnergyHack, Director of Corporate Relations	Jun 2019 - May 2020

Selected Press

“AI to Be Used to Develop Nuclear Fusion Energy,” by Ed Browne. Newsweek. November 2, 2022.

“Machine learning facilitates turbulence tracking in fusion reactors,” by Adam Zewe. MIT News. November 1, 2022.

“Hacking into a sustainable energy future,” by Taylor Tracy. MIT News. December 11, 2019.