Logan Engstrom

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March 20, 2025

http://loganengstrom.com

My research spans: <u>adversarial examples</u>, <u>ML robustness</u>, <u>the science of DL</u>, <u>accelerating ML systems</u>, <u>deep RL</u>, <u>training data attribution/selection</u>, <u>hyperparameter optimization</u>, <u>autodifferentiation</u>, and more.

Education

- **Massachusetts Institute of Technology (MIT)** — Cambridge, MA
  Candidate for Ph.D. in Computer Science (Advisor: Aleksander Mądry) — 2019 - 2025
- **Massachusetts Institute of Technology (MIT)** — Cambridge, MA
  M.Eng. in Computer Science — 2018 - 2019
- **Massachusetts Institute of Technology (MIT)** — Cambridge, MA
  B.Sc. in Computer Science (5.0/5.0 GPA) — 2015 - 2019

Selected Work (* denotes equal contribution; see my Google Scholar for more works)

1. **Logan Engstrom***, Andrew Ilyas*, Benjamin Chen*, Axel Feldmann, William Moses, and Aleksander Mądry. *Optimizing ML Training with Metagradient Descent*. 2025

2. Andrew Ilyas*, Sam Park* **Logan Engstrom***, Guillaume LeClerc, and Aleksander Mądry. *Datamodels: Predicting Predictions from Training Data*. ICML, 2022

3. **Logan Engstrom***, Andrew Ilyas*, Shibani Santurkar, Dimitris Tsipras, Firdaus Janoos, Larry Rudolph, and Aleksander Mądry. *Implementation Matters in Deep RL: A Case Study on PPO and TRPO*. In *ICLR (Oral Presentation)*, 2019

4. Andrew Ilyas*, Shibani Santurkar*, Dimitris Tsipras*, **Logan Engstrom***, Brandon Tran, and Aleksander Mądry. *Adversarial Examples Are Not Bugs, They Are Features*. NeurIPS (Spotlight Presentation), 2019

5. Dimitris Tsipras*, Shibani Santurkar*, **Logan Engstrom***, Alexander Turner, and Aleksander Mądry. *Robustness May Be at Odds with Accuracy*. ICLR, 2019

6. Anish Athalye*, **Logan Engstrom***, Andrew Ilyas*, and Kevin Kwok. *Synthesizing Robust Adversarial Examples*. ICML, 2018

Work Experience

- **Two Sigma** — New York, NY
  Quantitative Research Intern — Summer 2018
  – Researched deep RL; published two ICLR (oral) papers from summer work
- **Google Brain** — Mountain View, CA
  Research Intern — Summer 2017
  – Researched domain adaptation methods for semantic segmentation
- **Apple** — Cupertino, CA
  Software Engineering Intern — Summer 2016

Selected Projects

- **FlashBack: Fused attention backwards-over-backwards** — Triton, Jax
  A FlashAttention-style backwards pass (over the backwards pass) for attention — 2025
- **FFCV: Fast Forward Computer Vision** (2,000+ GitHub stars) — PyTorch, Numba
  (Very) fast dataloading for ML training — 2022

- **Tensorguard**   Python
  Runtime typechecking for PyTorch/Numpy tensors   *2022*
- **Fast Style Transfer** (10,000+ GitHub stars)   TensorFlow, Python
  Convolutional network for high quality perceptual style transfer   *2016*
- **Sistine** (Greylock Hackfest Winner)   Python/OpenCV
  Install a touch screen on any laptop with only computer vision and a $1 mirror   *2016*
- **Hextris** (More than 20,000,000 downloads)   JavaScript
  Free and open-source iOS/Android game   *2014 - 2015*

Awards

- **Google PhD Fellowship**   2021
- **MATLAB PhD Fellowship**   2020
- **NSF Graduate Research Fellowship**   2019
- **Siebel Scholarship**   2019
- **Morris Joseph Leven Award for Best Masters Thesis**   2019
- **Andreessen Horowitz Battle of the Hacks Winner**   2016
- **Greylock Hackfest Winner**   2016
- **WildHacks (Northwestern's Collegiate Hackathon) Winner**   2015, 2016
- **PennApps (UPenn's Collegiate Hackathon)** *Top 8, Apple Prize*   2014

Personal Interests

- **MIT EECS Graduate Applicant Assistance Program Co-organizer**   2022,2023
- **Theory of CS Intramural Soccer Team** *Won MIT Division A IM league*   2021,2022,2023
- **HackMIT and Blueprint Organizing Team**   2015-2017
- **Simmons Intramural Soccer Team** *Won MIT Division C IM league*   2016
- **Baker Intramural Dodgeball Team** *Won MIT Division B IM league*   2016
- **Baker House Executive Committee** *Freshman Representative*   2015