Logan Engstrom

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http://loganengstrom.com

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

Education

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