Logan Engstrom
engstrom@mit.edu

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http://loganengstrom.com

Education

- **Massachusetts Institute of Technology (MIT):** GPA - 5.0/5.0 — Cambridge, MA
  Candidate for Ph.D. in Computer Science — *2019 - ?*
- **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 coursework*: 18.657 High Dimensional Probability, 6.854 Advanced Algorithms, 9.520 Statistical Learning Theory, 6.252 Nonlinear Optimization, 18.408 The Algorithmic Toolkit, 6.853 Algorithmic Game Theory, 18.102 Functional Analysis

Work Experience and Research

- **Madry Lab, MIT CSAIL** — Cambridge, MA
  SuperUROP — *Sept 2017 - June 2018*
  - Research on designing adversarially robust deep learning models
- **Two Sigma** — New York, NY
  Quantitative Research Intern — *Summer 2018*
  - Worked towards understanding the fundamentals of deep reinforcement learning
- **Google Brain** — Mountain View, CA
  Research Intern — *Summer 2017*
  - Used style transfer based domain adaptation to improve semantic segmentation methods
- **Gifford Lab, MIT CSAIL** — Cambridge, MA
  UROP — *June 2014 - Spring 2017*
  - Research on modelling transcription factor binding with machine learning
- **Apple** — Cupertino, CA
  Software Engineering Intern — *Summer 2016*
  - Developed cross-device database synchronization system for iOS in Objective-C and C++

Publications (* denotes equal contribution)

1. Hadi Salman*, Andrew Ilyas*, **Logan Engstrom***, Sai Vemprala, Aleksander Madry, and Ashish Kapoor. Unadversarial examples: Designing objects for robust vision. *NeurIPs*, 2021
2. Kai Xiao, **Logan Engstrom**, Andrew Ilyas, and Aleksander Madry. Noise or signal: The role of image backgrounds in object recognition. *ICLR*, 2021
3. Hadi Salman*, Andrew Ilyas*, **Logan Engstrom***, Ashish Kapoor, and Aleksander Madry. Do adversarially robust imagenet models transfer better? *NeurIPs* ***Oral Presentation***, 2020
4. **Logan Engstrom***, Andrew Ilyas*, Shibani Santurkar, Dimitris Tsipras, Jacob Steinhardt, and Aleksander Madry. Identifying statistical bias in dataset replication. *ICML*, 2020
5. Dimitris Tsipras*, Shibani Santurkar*, **Logan Engstrom**, Andrew Ilyas, and Aleksander Madry. From imagenet to image classification: Contextualizing progress on benchmarks. *ICML*, 2020
6. **Logan Engstrom***, Andrew Ilyas*, Shibani Santurkar, Dimitris Tsipras, Firdaus Janoos, Larry Rudolph, and Aleksander Madry. Implementation matters in deep rl: A case study on ppo and trpo. In *International Conference on Learning Representations* ***Oral Presentation***, 2019

7. Andrew Ilyas*, **Logan Engstrom***, Shibani Santurkar, Dimitris Tsipras, Firdaus Janoos, Larry Rudolph, and Aleksander Madry. A closer look at deep policy gradients. In *International Conference on Learning Representations* ***Oral Presentation***, 2019
8. Andrew Ilyas*, Shibani Santurkar*, Dimitris Tsipras*, **Logan Engstrom***, Brandon Tran, and Aleksander Madry. Adversarial examples are not bugs, they are features. *NeurIPS* ***Spotlight Presentation***, 2019
9. Shibani Santurkar*, Dimitris Tsipras*, Brandon Tran*, Andrew Ilyas*, **Logan Engstrom***, and Aleksander Madry. Image synthesis with a single (robust) classifier. *NeurIPS*, 2019
10. Dimitris Tsipras*, Shibani Santurkar*, **Logan Engstrom***, Alexander Turner, and Aleksander Madry. Robustness may be at odds with accuracy. *ICLR*, 2019
11. Andrew Ilyas*, **Logan Engstrom***, Ludwig Schmidt, and Aleksander Madry. Prior convictions: Black-box adversarial attacks with bandits and priors. *ICLR*, 2019
12. **Logan Engstrom***, Brandon Tran*, Dimitris Tsipras*, Ludwig Schmidt, and Aleksander Madry. Exploring the landscape of spatial robustness. *ICML*, 2019
13. **Logan Engstrom***, Andrew Ilyas*, and Anish Athalye*. Evaluating and understanding the robustness of adversarial logit pairing. *NeurIPS Machine Learning and Computer Security Workshop*, 2018
14. Andrew Ilyas*, **Logan Engstrom***, Ludwig Schmidt, and Aleksander Madry. Prior convictions: Black-box adversarial attacks with bandits and priors. *ICLR*, 2019
15. Andrew Ilyas*, **Logan Engstrom***, Anish Athalye*, and Jessy Lin*. Query-efficient black-box adversarial examples. *ICML*, 2018
16. Daniel Kang, Richard Sherwood, Amira Barkal, Tatsunori Hashimoto, **Logan Engstrom**, and David Gifford. Dnase-capture reveals differential transcription factor binding modalities. *PloS one*, 2017

Preprints (* denotes equal contribution)

1. Andrew Ilyas*, Sam Park* **Logan Engstrom***, Guillaume LeClerc, and Aleksander Madry. Datamodels: Predicting predictions from training data. 2022
2. Guillaume Leclerc*, Hadi Salman*, Andrew Ilyas*, Sai Vemprala, **Logan Engstrom**, Vibhav Vineet, Kai Xiao, Pengchuan Zhang, Shibani Santurkar, Greg Yang, Ashish Kapoor, and Aleksander Madry. 3db: A framework for debugging computer vision models. 2021
3. **Logan Engstrom***, Andrew Ilyas*, Shibani Santurkar*, Dimitris Tsipras*, Brandon Tran*, and Aleksander Madry. Adversarial robustness as a prior for learned representations. 2019

Awards

- **Google PhD Fellowship** *Awardee* 2021
- **Matlab PhD Fellowship** *Awardee* 2020
- **NSF Graduate Research Fellowship Program** *Awardee* 2019
- **Siebel Scholarship** *Awardee* 2019
- **Morris Joseph Leven Award for best Masters Thesis** *Winner* 2019
- **AI Grant** (`https://aigrant.org/`) *Grant Winner* 2017
- **Andreessen Horowitz Battle of the Hacks** *First Place* 2016
- **Greylock Hackfest** *First Place* 2016
- **WildHacks (Northwestern's Collegiate Hackathon)** *Grand Prize* 2015, 2016
- **YHack (Yale's Collegiate Hackathon)** *Top 8, Facebook Prize* 2015, 2016
- **PennApps (UPenn's Collegiate Hackathon)** *Top 8, Apple Prize* 2014

Selected Projects

- **FFCV: Fast Forward Computer Vision (2,000+ GitHub stars)** PyTorch, Python
  10x faster model training for free *2022*
  - Train models 10x faster without any hardware or learning algorithm changes
- **TensorFire** (AI Grant Spring 2017 winner) TensorFlow, Python, JavaScript
  In-browser, flaming-fast, gpu-accelerated deep learning *2017*
  - 1000x faster web-based deep learning models than previous approaches
- **ConvNet for Fast Style Transfer** (6,000+ GitHub stars) TensorFlow, Python
  Add styles from famous paintings to any photo in a fraction of a second *2016*
  - Deep convolutional neural network for high quality perceptual style transfer
- **Sistine** (First Place at Greylock Hackfest) Python/OpenCV
  Install a touch screen on any laptop with only a $1 mirror and built-in webcam *2016*
  - Used computer vision to create a touch screen using the screen reflection onto a webcam
- **Hextris** (1,000+ GitHub Stars) JavaScript
  More than 5,000,000 downloads - Free and open-source iOS/Android game *2014 - 2015*

Personal Interests

- **HackMIT and Blueprint Organizing Team** 2015-2017
  - Organized HackMIT's largest hackathon for 3 years
  - Organized Blueprint, MIT's high school hackathon
- **Baker Executive Committee** *Freshman Representative* 2015-2016
- **Student Information Processing Board (SIPB)** *Member* 2016-present
- **Baker Intramural Dodgeball Team** *Won MIT Division B IM league* 2016
- **Simmons Intramural Soccer Team** *Won MIT Division C IM league* 2016