Benjamin C. Eysenbach

http://ben-eysenbach.github.io/

beysenba@cs.cmu.edu

Education

Carnegie Mellon University *PhD in Machine Learning* 2018 - present

Advisors: Prof. Ruslan Salakhutidnov and Prof. Sergey Levine

Relevant Courses: Convex Optimization (10-725), Statistics (36-705)

Massachusetts Institute of Technology *BS in Math for Computer Science* Sept. 2013 - June 2017

GPA: 4.9 / 5.0

Relevant Courses: Algebra (18.06, 18.701), Algorithms (6.046, 6.854, 6.856), Bayesian Modeling (6.882), Computer Graphics (6.837), Computer Vision (6.869), Inference (6.437, 6.438), Machine Learning (6.867), Statistical Learning Theory (6.860)

Teaching

Exploration in Reinforcement Learning *Co-Lead of Workshop @ ICML* July 2018

Co-founded and organized this workshop at the International Conference on Machine Learning (ICML).

Reinforcement Learning Bootcamp *Instructor* Jan. 2018 - Jun. 2018

Taught an internal RL class to a few teams at Google.

Introduction to Inference (6.008) *Teaching Assistant* Sept. 2016 – Dec. 2016

Math for Computer Science (6.042) *Teaching Assistant* Jan. 2015 – May 2015

Research / Work Experience

Google Brain *Brain Resident* July 2017 - July 2018

Conducted reinforcement learning research focused on making robots safer while decreasing their dependence on human supervision. Wrote papers and presented results at top-tier ML conferences.

IBM *Research Intern* Jan 2017

During MIT's January term, designed an algorithm to help non-experts visualize the results from clustering algorithms. Co-authored a paper for top data visualization journal.

Computer Vision Group, CSAIL, MIT *Undergraduate Researcher* Jan. 2015 - May 2017

Conducted research with Prof. Antonio Torralba and Carl Vondrick on inferring the beliefs of humans and segmenting objects in videos.

Uber Advanced Technologies Center *Machine Learning Intern* May 2016 – Aug 2016

Working with Prof. Jeff Schneider, I designed, implemented, and tested novel methods for making the self-driving cars drive more safely and smoothly.

Xerox Research Centre *Research Intern* Jan 2016 – Jan 2016

Developed an algorithm for robust optimization over predictions of machine learning models.

Creative Technology Lab at Adobe *Research Intern* June 2015 – Sept 2015

Built an automatic video tagging system using deep learning to recognize objects, scenes, and actions.

IIIS, Tsinghua University *Li and Fun Scholar* June 2014 – Aug 2014

Studied algorithmic game theory and coded simulations to verify proposed solutions.

Senseable Cities Lab, MIT *Undergraduate Researcher* Sept. 2013 – May 2014

Performed image analysis and system integration for an autonomous quadcopter system.

Fluid Interface Group in MIT Media Lab *Undergraduate Researcher* Sept. 2013 – Dec. 2013

Integrated a physics engine the lab's augmented reality platform to allow physics objects to interact with virtual ones.

Aeturnum *Intern* June 2013 – Aug. 2013

Built a recommendation engine for social networking app.

Harvard School of Engineering and Applied Sciences *Intern* May 2013 – June 2013

Created a game to crowdsource the discovery of molecules for use in solar panels.

Awards

Phi Beta Kappa June 2017

One of 75 MIT seniors chosen by a faculty committee for "superlative [undergraduate] records and clear evidence of breadth in the liberal arts (which include the science fields)."

Jeremy Gerstle UROP Award May 2017

Given by MIT EECS for "Outstanding Undergraduate Research Project in Artificial Intelligence."

2nd Place Oral Presentation at EECScon May 2015

Awarded for my presentation on "Hypercolumns for Video Segmentation" at MIT's undergraduate research conference.

Talks

Towards Autonomous Reinforcement Learning

Given at CMU AI Seminar (Sept 2018), OpenAI (May 2018), Google Brain (May 2018), Center for Human Compatible AI at UC Berkeley (Jan 2018)

Tools

Coding: Python (NumPy, SciPy), Bash. Familiar with C, C++, MATLAB
Machine Learning: Tensorflow, Caffe, Torch, scikit-learn
Visualization: Matplotlib, Inkscape, JS
Software: git, vim, Linux, LaTeX

Activities

MIT Unmanned Aerial Vehicle Team: Developed robots tracking and image stitching systems.
MIT Rocket Team: Designed sensor system for cold-flow and hot-fire tests. Wrote software to display real-time data.
Long Distance Trail Running: I enjoy running absurd distances in the mountains.

Publications

Abhishek Gupta, **Eysenbach, Benjamin**, Chelsea Finn, and Sergey Levine. Unsupervised meta-learning for reinforcement learning. *arXiv:1806.04640*, 2018.

Eysenbach, Benjamin, Abhishek Gupta, Julian Ibarz, and Sergey Levine. Diversity is all you need: Learning skills without a reward function. In *Submitted to International Conference on Learning Representations*, 2019.

John D Co-Reyes, YuXuan Liu, Abhishek Gupta, **Eysenbach, Benjamin**, Pieter Abbeel, and Sergey Levine. Self-consistent trajectory autoencoder: Hierarchical reinforcement learning with trajectory embeddings. *ICML*, 2018.

Benjamin Eysenbach, Shixiang Gu, Julian Ibarz, and Sergey Levine. Leave no trace: Learning to reset for safe and autonomous reinforcement learning. In *International Conference on Learning Representations*, 2018.

Bum Chul Kwon, **Eysenbach, Ben**, Janu Verma, Kenney Ng, Christopher De Filippi, Walter F Stewart, and Adam Perer. Clustervision: Visual supervision of unsupervised clustering. *IEEE transactions on visualization and computer graphics*, 24(1):142–151, 2018.

Eysenbach, Benjamin, Carl Vondrick, and Antonio Torralba. Who is mistaken? *arXiv:1612.01175*, 2016.