Michael Hu

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EDUCATION

Princeton University   Princeton, NJ
BSE in Computer Science   September 2017 - May 2021
- Minors: Statistics and Machine Learning, Robotics and Intelligent Systems
- GPA: 3.90 / 4
- Coursework: *Theoretical Machine Learning, *Theory of Deep Learning, *Advanced NLP, Computer Vision, Robotics, Computer Networks, Intro to Systems, Advanced Algorithms, Bayesian Modeling, Real Analysis

* indicates graduate-level course

WORK EXPERIENCE

Roblox   San Mateo, CA
Software Engineering Intern   June 2019 - August 2019
- Re-engineered ContentFilter, a high throughput (~15k qps) backend API that censors inappropriate text across the entire Roblox platform. Led 5 engineers to test and deploy the new ContentFilter. (C#, Docker)
- Reduced ContentFilter's latency by 15x (31 ms to 2ms) and its annual cost by $300,000.
- Fine-tuned BERT, a neural language model, to perform Named Entity Recognition (NER). (Python, PyTorch)
- Wrote scripts to automate the labeling of BERT's training data using Snorkel, a data programming package. Briefed 20+ Roblox engineers and data scientists on Snorkel and its use cases. (Python)

BatteryPOP   New York, NY
Software Engineering Intern   June 2018 - August 2018
- Co-developed yaasgames.com, an HTML5 games website. Enabled BatteryPOP to generate ad revenue from yaasgames.com by adding custom slots for banner and video ads. (WordPress, HTML, CSS, PHP)

SELECTED RESEARCH

Using Language to Transfer Knowledge in Reinforcement Learning   Fall 2020 – Present
Senior Thesis. Advisors: Tom Griffiths, Karthik Narasimhan   Princeton, NJ
- Designing methods to explain in natural language what deep reinforcement learning agents have learned. Providing these explanations to downstream agents to enable fast adaptation in new environments.

Safe Reinforcement Learning with Natural Language Constraints   Spring, Summer 2020
Junior Independent Work. Advisor: Karthik Narasimhan   Princeton, NJ
- Designed reinforcement learning agents that can follow natural language constraints, such as "Don't step in puddles." Created new simulated environments to test agent performance. Research published in *NeurIPS 2020, Deep Reinforcement Learning Workshop*. Paper link: https://arxiv.org/abs/2010.05150

Accelerating Entropy-Based Transformer Calibration   Fall 2019
Junior Independent Work. Advisor: Karthik Narasimhan   Princeton, NJ
- Calibrated GPT-2, a neural language model, to produce text more entropically consistent with natural language. Constructed and implemented new approximation algorithms to reduce GPT-2 calibration costs.

SKILLS

Languages: Proficient with Python and JavaScript. Familiar with R, Java, C, C#, Go, HTML, CSS, and PHP.
Data Science: PyTorch, TensorFlow, Keras, Jupyter, RStudio, Mechanical Turk, AWS, CUDA.
Web Development: WordPress, Node.js, .NET Core, REST API, Heroku, Docker.

ACTIVITIES AND INTERESTS

Undergraduate Teaching Assistant, Computer Networks   September 2020 - January 2021
- Lead group discussions on lecture material. Hosted debugging sessions for assignments. (C, Go, Python)

Careers Chair, Princeton Association for Computing Machinery (ACM)   March 2019 - March 2020
- Held mock interviews for ACM members. Organized on-campus corporate recruiting events and tech talks.

Breakdancing, journaling, cooking, finding new music on Spotify and YouTube