Jeffrey Wu

Email me@wuthejeff.com
Website wuthejeff.com
Github user WuTheFWasThat
Google Scholar user x4JAvwMAAAAJ

Summary: Machine learning researcher and full-stack engineer interested in keeping the world safe as technologies such as machine learning become more powerful.

Work Experience

- **OpenAI** Research engineer — Aug 2018 – Present
  Focused on methods for human in the loop training. Researched language modeling (including training GPT-2, a state-of-the-art model in 2019) and reward modeling (trained initial beta version of the instruct series).

- **Google Research** Software engineer — Oct 2016 – Aug 2018
  Built general infrastructure for supporting models for personalization from cross-product user history (basically learning giant embedding spaces for all users, Chrome pages, Youtube videos, etc). Experimented with RNN models to replace bag-of-words models, and contributed to launch of news feed trends personalization.

- **Terminal.com** Founding engineer — Jan 2013 – Oct 2016
  Building cloud-based container infrastructure, for scientific computing and online education. Helped design and implement many core systems across the stack and oversaw their security and scalability. Saw company grow from 2 to 12, and managed a small team of engineers. Interfaced with clients, including Crunchbase, Stanford University, Codecademy, and Udacity. Company was sold to Udacity.

- **Probabilistic Computing Project** Master's student — Nov 2011 – Jan 2013
  Implemented a probabilistic programming language. Explored a new Gibbs sampling algorithm to make inference more efficient in very general settings. Work presented [at NIPS 2012 probabilistic programing workshop]. [Source code] and [thesis].

Research

I'm broadly interested in training AI systems that are honest and kind to humans, and training assistive systems that make humans smarter or wiser.

- **Large-scale language model training** I trained GPT-2 (blog) and the early iterations of GPT-3 (NEURIPS 2020 best paper award), scaling up OpenAI's largest models from 110M parameters to over 6B parameters.

- **Reinforcement learning from human-specified values** I have been working on the problem of learning from humans. Early work trained models that produced summaries better than human-written ones. I then worked on book summarization and instruction following.

Selected Side Projects

- **Vimflowy** Vim inspired outlining tool with many features. [Source] (Typescript) and [Demo].
- **Hanabi simulation** Game engine for simulating hanabi strategies, and state of the art bots. Cited in [DeepMind/Brain paper] and subsequently [interviewed for WSJ]. [Source] (Rust).
- **Send A Damned Message** A simple puzzle game (Play here!)

Education

Massachusetts Institute of Technology **Cumulative GPA**: 4.8/5
B.S. in Mathematics, **B.S.** in Computer Science May 2012
M.Eng. in Computer Science January 2013

Skills

- Deep learning and machine learning (especially language modeling, RL, reward learning)
- Front end
- Devops, e.g. linux, cloud platforms, containers, databases
- Algorithms and distributed systems design
- CS theory (e.g. complexity theory, cryptography)
- Mathematics (2006-2008 USAMO, 2010 Putnam top 200)
- Keeping an eye on the big picture
- Acting with integrity