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Experience

Research Intern - Microsoft Research with Xiadong He, Jianfeng Gao *Jun '17 - Aug '17*
- Text-conditioned GAN's in a multi-step setting (update image after each sentence in description)
- A novel general neural architecture for multimodal problems - SoTA on Visual Dialog + evaluating on VQA
- Both for submission to ECCV 2018

Computer Vision Research with Ali Farhadi at UW *March '16 - June '16, Sep '16 - June '17*
- Methods for runtime (at test time) compilation/compression of CNNs based on the input.
- Methods for tractably optimizing over the space of deep architectures by conversion into a sampling problem.
- Methods for lossless model compression with associated proofs.
- Augmented losses (boosting layers) for training with less data and faster convergence.

Natural Language Processing Research with Yejin Choi at UW *Sep '16 - June '17*
- Building Actor-aware neural language models for text generation from noisy labels.

Amazon Fulfillment Technologies: SDE and Research Intern *Jun '16 - Sep '16*

Built Machine learning system to better predict labor rates in Fulfillment Centers for labor planning.
- Wrote regular pipeline for data aggregation, cleaning, model training and evaluation.
- Implemented online trade-offs among models in order to reduce catastrophic error in the tail.
- Decreased labor rate error by **80%** over current amazon implementation on multi-day forecasts into the future. Able to predict **24** hours into future off last **5** mins with very high accuracy.

Allen Institute for Artificial Intelligence: SDE and Research Intern *March '15 - Sep '16*

Summer (Full time) - Aristo Team - Engineering
- **AI10x award** for Caching of Solver results & Controller Speedup (total: 50x speedup)
- built recursive-git wrapper around git submodules implementing most of git commands - compatible with github and git viewers.

Spring (Part time) - Computer Vision - Diagram Understanding System
- Helped to get vision team up and running.
- Built arrow component detector and OCR system for diagram understanding.
- Added to internal tooling for image annotation & labelling (React.js)

Research with GRID lab group at UW *Jun '12 - March '15*
- Working with Dr. Jeff Ojemann (Director of Child Neurosurgery at Seattle Childrens) & Dr. Marcel Den Nijs (Biophysics)
- Built Time-Series database for Brain ECoG data capable of scaling to terabytes on a desktop.
- Exploring voltages/electromagnetic structures and Time-Frequency features for seizure prediction.

UW Robinson Center Transition School Senior Physics TA *Sep '13 - Feb '14, Sep '14 - Feb '15*

Internship with Yoky Matsuoka at Neurobotics Lab at UW *Summer '10*
- Led small team in design, building, and programming of nerve controlled (Electromyography) robotic arm.
- Latest iteration currently touring universities around country.

Education

Computer Science PhD. at Cornell University *Aug '17 - Ongoing*
- Recipient of Cornell Fellowship
- Continuing research from summer.
- Research at the intersection of Computer Vision and NLP

Computer Science and Neurobiology major at University of Washington *Sep '12 - Jun '17*
- GPA 3.7, Dean's List (Annual)
- Entered four years early through Early Entrance Program/Transition school (2011-2012)

Projects

Anime Recommendation Engine *Jun '13 - Dec '14*

- Eigenvector/Pagerank style techniques for recommendation.
- Implemented a genre-based Hausdorff distance similarity ranking.
- Built an HTML parser in ruby for Scraped Web-Pages (user data was scraped)

AI2 hackathon project - Lesson plan generator *Aug '15 - Aug '15*

- Given a topic (e.g. "variational inference"), generate a lesson plan of papers to read from AI2's corpus.
- Wrote scraping/data extraction code, web server backend to generate lesson plan from weighted dependency graph, and 3 of the classifiers used for generating the dependency graph structure among papers.

Awards

- Cornell first year PhD fellowship
- AI2 - AI10x award for 50x cache speedup
- NASA Space Grant Finalist
- Johns Hopkins Univerty Center for Talented Youth: State Award for High Honors

Natural Languages

- Native: English, French, Moroccan
- Fluent: Spanish
- Learning: Italian, Mandarin

Artificial Languages

- Experienced: Java, Scala, Python, Ruby, C, C++, Javascript
- Limited Experience: Haskell, Crystal, Pony, Nim