Yuxing (Eunice) Chen

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EDUCATION

STANFORD UNIVERSITY
M.S. in Symbolic Systems
September 2019 | Stanford, CA
Cum. GPA: 3.824

UNIVERSITY OF CALIFORNIA, LOS ANGELES
B.S. in Applied Mathematics
B.A. in Linguistics and Computer Science
June 2017 | Los Angeles, CA
cum laude
UCLA Dean's Honors List
Cum. GPA: 3.79 / 4.0

LINKS

Github: github.com/yuxingch
LinkedIn: linkedin.com/in/yuxingch
Personal Website: yuxingch.github.io

COURSEWORK

GRADUATE
Convolutional Neural Networks for Visual Recognition
Optimization and Algorithmic Paradigms
Information Retrieval and Web Search
Introduction to Databases
Deep Generative Models
Machine Learning
Mining Massive Data Sets
Natural Language Understanding
Natural Language Processing with Deep Learning

UNDERGRADUATE
Algorithms and Complexity
Applied Numerical Methods
Computational Linguistics
Formal Languages and Automata Theory
Fundamentals of Artificial Intelligence
Graph Theory
Mathematical Modeling
Operating Systems Principles
Programming Languages
Software Construction Laboratory

PUBLICATION

Jiang, Hang*; Haoshen Hong*; Yuxing Chen*; and Vivek Kulkarni. 2019. **DialectGram: Automatic Detection of Dialectal Changes with Multi-geographic Resolution Analysis.** To appear in Proceedings of the Society for Computation in Linguistics. New Orleans: Linguistic Society of America.
(*: equal contribution)

SKILLS

PROGRAMMING
C/C++ • Python • PyTorch• TensorFlow
Java • MySQL • Git • Shell Script
MATLAB • Docker • Emacs • LaTeX
Swagger • Spark • Lisp

EXPERIENCE

HOODLINE | Machine Learning Engineering Intern
June 2018 – September 2018 | San Francisco, CA

- Deployed a web service that filters and ranks images for editors to pick faster the most appealing image using Deep Ranking Net
- Designed, tuned and trained the model to learn the mapping from image features (extracted using Inception Residual Network) to engagement scores
- Built a web service to score how closely the image is semantically related to the article in preparation using `GloVe`
- Created a `Docker` container image to wrap up the application and enable operational ability; used `Swagger` to expose these models as `REST API`
- Shipped a library that allows company-wide users to build new datasets, fine-tune the engagement score model and make better predictions

INDIVIDUAL RESEARCH | Probing the Pragmatic Information Encoded in Neural Networks' Word Embedding Space
October 2018 - Current | ALPS Lab, Stanford University

- Proposed a new neural network approach to predicting the implicature (e.g. "some", "or") strength on naturalistic as well as unnaturalistic utterances
- Compared the performance of neural models that differ in the underlying word embedding model (`GloVe`, `ELMo`,or `BERT`) and in the sentence embedding model, with including the discourse context or not as the third variable
- Provided the evidence that the neural models have the capability of capturing the qualitative effects of hand-mined linguistic features and contextual cues that are proved to have influence on human inference strength judgments
- Improved the conditional r-squared by `76.8%`, correlation coefficient by `47%`

PROJECTS

DEEP GENERATIVE MODELS | Generative Image Inpainting Models
September 2018 – December 2018 | Stanford University

- Researched on different generative approaches to fill in the holes of an incomplete image with reasonable content (image inpainting)
- Built an encoder-decoder network to get latent feature maps, propagate through a fully-connected layer, and generate pixels of the missing region
- Improved the visual quality of the results by replacing the naive discriminator in GANs with a global context discriminator and a local context discriminator
- Added Contextual Attention to preserve features from distant spatial locations
- Trained the models on Microsoft COCO dataset; used Inception Score (`11.5±1.5`) and Fréchet Inception Distance (`53.3`) to evaluate the results

NLP WITH DL | BiDAF-inspired Preferential Multi-perspective Matching for Question Answering Task (LINK)
January 2018 – March 2018 | Stanford University

- Combined the ideas of two high-performing SQuAD models, Bidirectional Attention Flow (BiDAF) and Bilateral Multi-Perspective Matching (BiMPM)
- Applied a preferential rule when aggregating their results and aim for a more comprehensive view of the interaction between two sequences
- Refined the model using character-level embeddings in the Encoder Layer to better handle out-of-vocabulary words
- Used Dynamic Pointing Decoder to recover from local maximum corresponding to initial incorrect guess in the Output Layer and smarter span selection at test time (`Best F1 score: 75.711; Best EM score: 65.74`)

OPERATING SYSTEMS PRINCIPLES | Inter-Process Communication and Encrypted Network Communication (LINK)
May 2017 | University of California, Los Angeles

- Built a multi-process telnet-like client-server model that passes contents over a TCP socket and runs a shell on the server side
- Used `termios`, `tcgetattr`, `tcsetattr`, etc. to manipulate terminal attributes; used `fork` to create a child process to execute shell commands; used `waitpid` to get the child's exit status
- Used pipes to forward inputs from the server process to the shell process
- Applied twofish algorithm in `mcrypt` library to encrypt and decrypt the traffic