

Hanson Lu

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EDUCATION

Stanford University, *Master of Sciences*, Computer Science, expected graduation Jun 2022 Starting Sept 2020

The University of Chicago, *B.S.* Computer Science with honors and *B.A.* Linguistics with honors Sept 2016 – Jun 2020

Computer Science Specialization in Machine Learning

Summa Cum Laude, *Member of Phi Beta Kappa*, *Leonard Bloomfield Prize Recipient* (highest GPA in graduating linguistics majors)

EXPERIENCE

Full-Stack Developer, Web Application for Lu's Dermatology Clinic, Wuhan, China July 2020 – Present

- Developing new web application to serve over 1000 patients monthly for family-owned clinic, to be deployed by end of year
- Creating time-slot scheduling and appointment interface using Bootstrap, JavaScript, and the WeChat Mini App framework
- Implementing backend server using Python Flask; designing scalable database schemas with MySQL and SQLAlchemy
- Projected to reduce patients' and staff's time for making appointments by at least 70% compared to current methods

Bachelor's Thesis, Department of Linguistics and Computer Science, University of Chicago Oct 2019 – Present

- Research applications to coreference resolution of the Rational Speech Acts (RSA) model, a probabilistic model for pragmatic text understanding; advised by Allyson Ettinger
- Implemented and trained Transformer and RNN-based referring expression generator, as part of the RSA model
- Explored hyperparameter space and increased recall scores over state-of-the-art by 1%, with strengths in long-distance links

Research Intern, Center for the Study of Language and Information (CSLI), Stanford University Jun 2019 – Present

- Researched applications of the RSA model in automatic text summarization, advised by Chris Potts
- Augment pointer-generator neural summarizer with the RSA model in PyTorch
- Increased sentence processing efficiency by 2000x compared to prototype, using vectorization methods during beam-search
- Presented research at concluding seminar at CSLI and at Undergrad Research Symposium at UChicago

Research Assistant, Linguistica Project, University of Chicago Jun 2018 – Dec 2018

- Collaborated on developing Linguistica, an unsupervised morphological analysis software, with Prof. John Goldsmith
- Programmed new functionalities in C++ for Linguistica such as file save/load and GUI components on the Qt 5.11 platform
- Researched, discussed and implemented algorithms for compound word discovery and performance evaluation

ACTIVITIES

Backend Developer, Hack4Impact, University of Chicago chapter Apr 2018 – Jun 2019

- Develop a website for the Transgender Law Center that helps transgender individuals navigate legal documents and procedures
- Design and implement back-end data structures and login system using Go and SQLite

Programmer, Radioglass, Game Design Club, University of Chicago Jan 2018 – Jun 2019

- Collaborated in brainstorming and designing game mechanics for Radioglass, a role-playing game
- Developed finite state machine AI for in-game creatures, implemented dialogue system using GameMaker Studio2

Flutist, Middle Eastern Music Ensemble, University of Chicago Jan 2017 – Dec 2018

- Performed in music concerts at the end of each quarter, repertoire includes Turkish, Persian and Arabic music

Volunteer, MEDLIFE, University of Chicago Chapter Sept 2016 – Mar 2017

- Engaged in biweekly discussions on global health issues, attended training sessions for mobile clinic trip
- Built mobile clinics and provided health services to 3 villages in Cusco, Peru during spring break trip

SKILLS

- Proficient in Python (including TensorFlow and Pytorch), C, C++, Java, JavaScript, R, HTML, CSS, Go and SQL.
- Familiar with Linux system APIs, proficient in Git and Subversion.
- Fluent in Mandarin Chinese, intermediate fluency in Japanese, elementary Spanish