Enci Liu

https://jesscel.github.io/ | (650) 918-9963 | liuec.jessica2000@gmail.com

EDUCATION

Stanford University, Stanford, CA
B.S. in Computer Science (GPA: 3.97/4.30*)* *09/2018 – 06/2022*
Stanford University, Stanford, CA
M.S. in Computer Science *06/2022 – Expected 06/2023*
Relevant Coursework: CNNs for Visual Recognition, Natural Language Processing with Deep Learning, Machine Learning, Coursera GAN Specialization, Machine Learning with Graphs, Probabilistic Graphical Models

RESEARCH EXPERIENCE

Sustain Lab, Stanford, CA *03/2021 – present*

- Designed a cost- and time-efficient pipeline, called *IS-Count*, for large-scale object counting using remote-sensing imagery and achieved 99% accuracy on estimating object counts in 43 African countries, 51 US states, and Bangladesh while using as few as 0.01% of the satellite images. Led to a publication at AAAI 2022.
- Led a group of 4 members on a project that utilizes quantile regression to accurately estimate building coverage in Africa and South America with an r^2 of 0.92. Led to a paper currently under revision and submission.
- Leading a project on data augmentation for detection and classification using denoising diffusion probabilistic models.

Hazy Research, Stanford, CA *02/2021 – 09/2021*

- Designed methods for *metadata shaping*, a data-centric approach that introduces inductive biases by modifying the input data for improving the tail performance of pre-trained language models (BERT base) on entity-heavy tasks.
- Experimented with different combinations of metadata-shaping techniques on text classification, entity typing, and relation extraction benchmarks, leading to an overall improvement of 5.3 F1 score and a tail-example improvement of 10 times compared to the BERT baseline without metadata shaping. Led to a publication at Findings of ACL 2022.

PUBLICATIONS

Chenlin Meng*, **Enci Liu***, Willie Neiswanger, Jiaming Song, Marshall Burke, David B. Lobell, Stefano Ermon. *IS-Count: Large-scale Object Counting from Satellite Images with Covariate-based Importance Sampling*. In *AAAI* (Oral presentation), 2022.

Simran Arora, Sen Wu, **Enci Liu**, and Christopher Ré. *Metadata Shaping: Natural Language Annotations for the Long Tail*. In *Findings of ACL*, 2022.

TEACHING & WORKING EXPERIENCE

Section Leader for the CS198 Program, Stanford, CA *09/2020 – present*

- Lead and teach sections of 10 to 13 people for Python and C++ courses (CS106A and CS106B)
- Grade sectionee's assignments and attend helping sections for all students enrolled in both courses

Microsoft Explore Intern, San Francisco, CA *06/2020 – 09/2020*

- Created a feature that provides alt-text for images in Outlook iOS with VoiceOver, which increases the accessibility of Outlook mobile and empowers users with vision impairments
- Conducted user research and interviews on rich-text signature in Outlook mobile and proposed three new designs

Spreadsheet developer for Mechanical Engineering (ME) Department, Stanford, CA *05/2020 – 10/2020*

- Added 4-year planning table to ME Department's online program sheet using Epilog (logic programming) and HTML
- Updated the program sheet to incorporate new course prerequisites to provide a more thorough user experience

PROFICIENCY

Python, C++, PyTorch, CSS/HTML, Swift