Enci Liu

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EDUCATION

Stanford University, Stanford, CA
B.S. in Computer Science (GPA: 3.98*)* *09/2018 – 06/2022*
Stanford University, Stanford, CA
M.S. in Computer Science (GPA: 4.00*)* *06/2022 – Expected 06/2023*
Relevant Coursework: Design and Analysis of Algorithms, Computer Organization and Systems, Machine Learning, Machine Learning with Graphs, Probabilistic Graphical Models, Data Management and Data Systems

WORKING & TEACHING EXPERIENCE

Software Development Internship at Microsoft, San Francisco, CA *06/2020 – 09/2020*
- Implemented image alt-text voice-over function in Outlook iOS. The feature is deployed to over 100 million Outlook iOS users, empowering people with vision impairments.
- Conducted user research and interviews on rich-text signature in Outlook mobile and proposed three new designs.

Teaching Assistant at Stanford CS Department, Stanford, CA *09/2020 – present*
- Lead and teach weekly sections of ~15 students in introductory programming classes of size larger than 500.
- Grade assignments and exams, attend helping/debugging sessions, and hold weekly office hours for courses covering data structures, object-oriented programming, and symbolic logic.

Developer at Stanford Law School CodeX Insurance Initiative, Stanford, CA *11/2022 – present*
- Encode real-world insurance contracts into computable contracts online.
- Collaborate with researchers and UX designers to develop methods for containment testing and design UIs.

RESEARCH EXPERIENCE

Sustain Lab, Stanford, CA *03/2021 – present*
- Designed a cost- and time-efficient pipeline for large-scale object counting using remote-sensing imagery and achieved 99% accuracy on estimating different object counts in Africa, US, and Bangladesh while using as few as 0.01% of the satellite images. Published and was chosen for oral presentation at AAAI 2022.
- Led a group of 4 members to tackle the building coverage estimation task using satellite images. Achieved a coefficient of determination of 0.92 with the ground-truth data and allowed for more temporal-robust estimation of building coverage through time. Led to a AAAI 2023 submission currently under review.

Hazy Research, Stanford, CA *02/2021 – 09/2021*
- Designed a data-centric approach that introduces inductive biases by modifying the input data. Achieved comparable or better performance than state-of-the-art models on entity-heavy tasks and better model explainability.
- Experimented with different combinations of metadata-shaping techniques on text classification, entity typing, and relation extraction benchmarks. Lead 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*, 2022.

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

PROFICIENCY & SKILLS

Python, C++, MySQL, PyTorch, GCP, BigQuery, Linux, ML, DL, GIS (Geographic Information System), HTML