Justin Lovelace

(512)964-9498 jlovelac@andrew.cmu.edu

Education

Carnegie Mellon University *August 2020-August 2022*
M.S. in Language Technologies, School of Computer Science GPA: 4.17

Texas A&M University *May 2020*
B.S. in Computer Science, Minor in Mathematics GPA: 4.0
Honors Fellow, Engineering Honors, Undergraduate Research Scholar

Undergraduate Honors Thesis
Predicting ICU Readmission with Clinical Notes (**Outstanding Undergraduate Honors Thesis Award**)

Publications

J. Lovelace, B. Mortazavi, "Learning to Generate Clinically Coherent Chest X-Ray Reports" *Findings of EMNLP 2020*.

J. Lovelace, N. Hurley, A. Haimovich, B. Mortazavi, "Dynamically Extracting Outcome-Specific Problem Lists from Clinical Notes with Guided Multi-Headed Attention" *Machine Learning for Healthcare Conference (MLHC)*, 2020.

J. Lovelace, N. Hurley, A. Haimovich, B. Mortazavi, "Mining Dynamic Problem Lists from Clinical Notes for the Interpretable Prediction of Adverse Outcomes" *ACM Conference on Health, Inference, and Learning (CHIL) Workshop*, 2020. (**Oral Spotlight**)

J. Lovelace, N. Hurley, A. Haimovich, B. Mortazavi, "Explainable Prediction of Adverse Outcomes Using Clinical Notes" *Machine Learning for Health (ML4H) Workshop at NeurIPS*, 2019.

Research Experience

Teledia Lab *August 2020-Present*
Graduate Research Assistant with Dr. Carolyn Rosé (CMU)

- Developing methods to utilize unstructured text to improve knowledge base completion.

Systems and Technology for Medicine and IoT Lab *April 2018-May 2020*
Undergraduate Researcher with Dr. Bobak Mortazavi (TAMU)

- Developed convolutional attention models for the interpetable prediction of ICU readmission and patient mortality using clinical notes.

Sketch Recognition Lab *January 2017-May 2017*
Undergraduate Researcher with Dr. Tracy Hammond (TAMU)

- Developed a machine learning model to predict users' personality traits based on their social media activity.

Industry Experience

Facebook (Search) *May 2020-August 2020*
Sofware Engineering Intern

- Developed a service (C++, Python, SQL) to onboard keywords to the search index in real time from a variety of sources (e.g. news articles).
- Conducted experiment with live traffic and found that my framework improved Facebook's total search volume, search value metrics, and keyword retrieval latency.
- Launched service to production.

Facebook (Notification Ranking) *May 2019-August 2019*
Sofware Engineering Intern

- Implemented rate limiting service (C++, Python) to protect Facebook's internal reachability service and its dependencies from unstable traffic.
- Developed ML pipeline (Python, SQL) to extend reachability service from email to include SMS and demonstrated that the ML model can reduce the amount of undeliverable SMS sent by over half.

Raytheon Applied Signal Technology *May 2018-August 2018*
Sofware Engineering Intern
- Developed scripts (Python) to automate testing procedures across multiple platforms, saving my team many hours of manual testing with each release.

Presentations

Clinical NLP Workshop at EMNLP 2020 *Nov 2020*
Learning to Generate Clinically Coherent Chest X-Ray Reports (Oral Presentation)
Texas A&M Undergraduate Research Scholars Symposium *March 2019*
Predicting ICU Readmission with Clinical Notes (Oral Presentation)
Texas A&M Engineering Project Showcase *April 2017*
Predicting User Characteristics from their Social Media Activity (Poster Presentation)

Graduate Coursework

Machine Learning, **Deep Learning**, **Natural Language Processing**

Technical Skills

Python, C++, SQL, Matlab, Pytorch, Tensorflow, Git

Service

Reviewer
- ACM Conference on Health, Inference, and Learning (CHIL), 2020, 2021
- NeurIPS Machine Learning for Health (ML4H) Workshop, 2019, 2020
- PLOS One

Honors and Awards

Computing Research Association's 2020 Outstanding Undergraduate Researcher Award (Honorable Mention)

Outstanding Undergraduate Honors Thesis Award

Machine Learning For Health (ML4H) Workshop at NeurIPS 2019 Travel Grant Award

Craig and Galen Brown Foundation Scholar