

Justin Lovelace

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Education	Cornell University Ph.D in Computer Science	2022-Present
	Carnegie Mellon University M.S. in Language Technologies, School of Computer Science	2020-2022 GPA: 4.10
	Texas A&M University B.S. in Computer Science, Minor in Mathematics Honors Fellow, Undergraduate Research Scholar	2016-2020 GPA: 4.0
Publications	<ol style="list-style-type: none">1. Justin Lovelace, Varsha Kishore, Chao Wan, Eliot Shekhtman, Kilian Weinberger "Latent Diffusion for Language Generation", <i>Preprint</i>, 20222. Justin Lovelace and Carolyn Rosé, "A Framework For Adapting Pre-Trained Language Models to Knowledge Graph Completion", <i>Conference on Empirical Methods in Natural Language Processing (EMNLP)</i>, 2022.3. Justin Lovelace, Denis Newman-Griffis, Shikhar Vashishth, Jill Fain Lehman, and Carolyn Rosé, "Robust Knowledge Graph Completion with Stacked Convolutions and a Student Re-Ranking Network", <i>Annual Meeting of the Association for Computational Linguistics and the International Joint Conference on Natural Language Processing (ACL-IJCNLP)</i>, 2021.4. Sopan Khosla, Justin Lovelace, Ritam Dutt, Adithya Pratapa, "Team JARS: DialDoc Subtask 1 - Improved Knowledge Identification with Supervised Out-of-Domain Pretraining", <i>ACL-IJCNLP Workshop on Document-grounded Dialogue and Conversational QA (ACL-IJCNLP DialDoc Workshop)</i>, 2021.5. Justin Lovelace, Bobak Mortazavi, "Learning to Generate Clinically Coherent Chest X-Ray Reports", <i>Findings of the Conference on Empirical Methods in Natural Language Processing (Findings of EMNLP)</i>, 2020.6. Justin Lovelace, Nathan C. Hurley, Adrian Haimovich, Bobak Mortazavi, "Dynamically Extracting Outcome-Specific Problem Lists from Clinical Notes with Guided Multi-Headed Attention", <i>Machine Learning for Healthcare Conference (MLHC)</i>, 2020.7. Justin Lovelace, Nathan C. Hurley, Adrian Haimovich, Bobak Mortazavi, "Mining Dynamic Problem Lists from Clinical Notes for the Interpretable Prediction of Adverse Outcomes", <i>ACM Conference on Health, Inference, and Learning Workshop (ACM CHIL Workshop)</i>, 2020. (Oral Spotlight)8. Justin Lovelace, Nathan C. Hurley, Adrian Haimovich, Bobak Mortazavi, "Explainable Prediction of Adverse Outcomes Using Clinical Notes", <i>NeurIPS Machine Learning for Health Workshop (NeurIPS ML4H Workshop)</i>, 2019.	
Research Experience	Teledia Lab Graduate Research Assistant with Dr. Carolyn Rosé (CMU)	<i>August 2020-August 2022</i>
	<ul style="list-style-type: none">• Developing methods that utilize textual resources to improve the coverage of knowledge graphs.	
	Systems and Technology for Medicine and IoT Lab Undergraduate Researcher with Dr. Bobak Mortazavi (TAMU)	<i>April 2018-May 2020</i>
	<ul style="list-style-type: none">• Developed convolutional attention models to extract information from clinical notes and predict adverse outcomes for ICU patients.• Developed an abstractive radiology report generation framework that improved the clinical correctness of generated reports.	

Industry Experience	<p>Facebook (Search) <i>May 2020-August 2020</i> Software Engineering Intern</p> <ul style="list-style-type: none"> • 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, and keyword retrieval latency. • Launched service to production. <p>Facebook (Notification Ranking) <i>May 2019-August 2019</i> Software Engineering Intern</p> <ul style="list-style-type: none"> • 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. • Demonstrated that the ML model can reduce the amount of undeliverable SMS sent by over half. <p>Raytheon Applied Signal Technology <i>May 2018-August 2018</i> Software Engineering Intern</p> <ul style="list-style-type: none"> • Developed scripts (Python) to automate testing procedures across multiple platforms, saving my team many hours of manual testing with each release.
Presentations	<p>Clinical NLP Workshop at EMNLP 2020 <i>Nov 2020</i> Learning to Generate Clinically Coherent Chest X-Ray Reports (Oral Presentation)</p> <p>Texas A&M Undergraduate Research Scholars Symposium <i>March 2019</i> Predicting ICU Readmission with Clinical Notes (Oral Presentation)</p> <p>Texas A&M Engineering Project Showcase <i>April 2017</i> Predicting User Characteristics from their Social Media Activity (Poster Presentation)</p>
Graduate Coursework	Machine Learning, Deep Learning, Convex Optimization, Natural Language Processing
Technical Skills	Python, C++, SQL, Pytorch, Tensorflow, Git
Service	<p>Reviewer</p> <ul style="list-style-type: none"> • ACM Conference on Health, Inference, and Learning (CHIL), 2020, 2021 • NeurIPS Machine Learning for Health (ML4H) Workshop, 2019, 2020, 2021 • PLOS One, 2020, 2021
Honors and Awards	<p>Computing Research Association's 2020 Outstanding Undergraduate Researcher Award (Honorable Mention)</p> <p>Outstanding Undergraduate Honors Thesis Award</p> <p>Machine Learning For Health (ML4H) Workshop at NeurIPS 2019 Travel Grant Award</p> <p>Craig and Galen Brown Foundation Scholar</p>
Extracurriculars	<p>Junior Advisor For University Honors <i>November 2017-May 2019</i></p> <ul style="list-style-type: none"> • Select and lead the following year's team of sophomore advisors. • Organize and carry out a number of events to foster community within the honors dorms.

Sophomore Advisor For University Honors

January 2017-May 2018

- Teach the honors seminar required for all freshman in university honors.
- Facilitate a variety of discussions between freshman honors students in a small group setting.

Student Representative For Honors and Undergraduate Research Advisory Committee

August 2018-May 2019

- Sat as the student representative on the committee responsible for the various honors and undergraduate research programs.

Texas A&M Powerlifting Team

August 2016-May 2020

All-American Powerlifter

- Placed 2nd in the nation in 2019.
- Placed 4th in the nation in 2018.