Curriculum Vitae

Dominick Reilly

Department of Computer Science
University of North Carolina at Charlotte
Charlotte, NC 28223

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Education

University of North Carolina at Charlotte *August 2021 - Present*
Doctor of Philosophy, Computer Science
Advisor: Dr. Min C. Shin

University of North Carolina at Charlotte *January 2019 - May 2021*
Bachelor of Science in Computer Science, Minor in Statistics
Honors: *Summa Cum Laude* (GPA: 4.0)
Notable Coursework: Machine Learning, Natural Language Processing, Computer Vision, Linear Algebra, Time Series Analysis, Applied Regression, Statistics I & II, Calculus I-III

Skills

Proficient	Python, PyTorch, Keras, Scikit, Slurm, Git
Familiar	Flask, HTML/CSS, JavaScript, Matlab, C, Tableau, R

Experience

University of North Carolina at Charlotte, Charlotte NC *August 2021 - Present*
Research Assistant - Video and Image Analysis Lab

- Objective: Design deep learning models for classifying social interaction from audio clips
- Proposed and tested techniques for fusing representations from multiple modalities using pre-trained language transformers
- Performed extensive evaluation of deep learning models on large real-world datasets
- Implemented and trained speaker identification models from scratch on large audio corpora

University of North Carolina at Charlotte, Charlotte NC *August 2020 - May 2022*
Research Assistant - Data Privacy Lab

- Objective: Design and evaluate privacy preserving and provably private image obfuscation
- Designed and implemented pixel sampling based image obfuscation technique satisfying rigorous mathematical privacy guarantees (differential privacy)
- Performed theoretical and practical evaluations of differentially private image obfuscation
- Worked with another student to create a manuscript and software for demonstrating differentially private image obfuscation. This work was published in EDBT 2022
- Mentored various undergraduate students

University of North Carolina at Charlotte, Charlotte NC *August 2019 - July 2021*
Undergraduate Research Assistant - Video and Image Analysis Lab

- Objective: 1) Incorporate deep learning based object detection into a biological motion tracker. 2) Improve orientation estimation through real-time algorithms
- Trained and optimized state of the art computer vision models to localize, segment, and track objects of interest in videos containing biological objects (FasterRCNN & MaskRCNN)
- Proposed and designed algorithms improving orientation estimation of object tracking systems, resulting in a 90% reduction in estimated orientation error
- Mentored a team of undergraduate students

Publications

1. Muhammad Usama Saleem, **Dominick Reilly**, Liyue Fan, "DP-Shield: Face Obfuscation with Differential Privacy," International Conference on Extending Database Technology, 2022.
2. **Dominick Reilly**, Liyue Fan, "Comparative Evaluation for Differentially Private Image Obfuscation," IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications, 2021.

Presentations

1. Kelly White*, **Dominick Reilly***, Gianna Scoleri, Samuel Tate, Cade Mack, Minwoo Lee, Matthias R. Mehl, Amar Dhand, Min Shin, "Detecting Face-to-Face Interactions with SocialBit: A Novel Algorithm for Wearables", Face2face: advancing the science of social interaction, The Royal Society, London, 2022. *(to appear)*
2. **Dominick Reilly**, "SocialBit: A Non-invasive and Robust Solution for Measuring Social Interaction," EXPLORE - Community Event, UNC Charlotte (2021)
3. **Dominick Reilly**, "SocialBit: A Non-invasive and Robust Solution for Measuring Social Interaction," Graduate Research Seminar, UNC Charlotte (2021)

Attended Conferences

1. IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications, Dec 2021 (*as author*)
2. IEEE Automatic Speech Recognition and Understanding Workshop, Dec 2021 (*as non-author*)

Awards, Achievements

1. Recieved best poster award in the Mathematics and Computer Science Discipline at UNC Charlotte's undergraduate research conference for my poster, "Evaluating Provably Private Obfuscations for Eye and Face Images" (2020)

2. Chancellor's List (2019-2021)

* indicates co-first author