Garrett Greiner

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Education

University of Utah August, 2024 – Present
Ph.D. Student, Computer Science *Salt Lake City, Utah*

Trinity University August, 2020 – May, 2024
B.S. in Computer Science with Additional Math Major *San Antonio, Texas*
GPA: 3.89/4.0

Honors Thesis: "Multi-Modal EEG NEO-FFI with Trained Attention Layer (MENTAL) for Mental Disorder Prediction"

Publications

Greiner, G., Zhang, Y. Multi-modal EEG NEO-FFI with Trained Attention Layer (MENTAL) for mental disorder prediction. Brain Inf. 11, 26 (2024).

Greiner, G., Tuba, E. (2023). Detecting Image Forgery Using Support Vector Machine and Texture Features. In: Quaresma, P., Camacho, D., Yin, H., Gonçalves, T., Julian, V., Tallón-Ballesteros, A.J. (eds) Intelligent Data Engineering and Automated Learning – IDEAL 2023. IDEAL 2023. Lecture Notes in Computer Science, vol 14404. Springer, Cham.

Research Presentations

G. Greiner, "Multi-Modal EEG NEO-FFI with Trained Attention Layer (MENTAL) for Mental Disorder Prediction," *presented at the Annual Summer Undergraduate Research Conference*, Trinity University, San Antonio, TX, July 2023.

G. Greiner, L. Martinez, "Multi-Dimensional Interpretable Interaction Network (MDiiN) for Modeling Aging Health and Mortality," *presented at the 6th Annual Symposium for Undergraduate Research Exploration (SURE) at the University of Texas at Austin*, UT Austin, Austin, TX, November 2022.

G. Greiner, L. Martinez, "Multi-Dimensional Interpretable Interaction Network (MDiiN) for Modeling Aging Health and Mortality," *presented at the Annual Summer Undergraduate Research Conference*, Trinity University, San Antonio, TX, July 2022.

B. Gustafson, **G. Greiner**, "Interpreting Neural Network Models on Age-Associated DNA Methylation," *presented at the Annual Summer Undergraduate Research Conference*, Trinity University, San Antonio, TX, July 2021.

Research Experience

Undergraduate Research Assistant May, 2021 – May, 2024
Lab of Dr. Yu Zhang, Trinity University Department of Computer Science *San Antonio, Texas*

Project: Interpreting Neural Network Models on Age-Associated DNA Methylation Dataset

- Aimed to explain how neural networks trained on DNA methylation data make predictions

- Used various interpretation models to explain predictions

Project: Multi-Dimensional Interpretable Interaction Network (MDiiN) Model
- Proposed MDiiN to accurately predict trajectories of health variables and survival
- Presented the work at the UT SURE symposium in 2022

Project: Multi-Modal EEG NEO-FFI with Trained Attention Layer (MENTAL) for Mental Disorder Prediction
- One of the first multi-modal models to use EEG and NEO-FFI data
- Published in Brain Informatics (vol. 11)

Undergraduate Research Assistant August, 2023 – May, 2024
Lab of Dr. Cabral Balreira, Trinity University Department of Mathematics *San Antonio, Texas*

Project: Understanding the Space of Graph Partitions to Detect Gerrymandering
- Proposed new methods for ensemble generation for gerrymandering detection
- Discovered a bug in the Python library GerryChain

Undergraduate Research Assistant March, 2023 – November, 2023
Lab of Dr. Eva Tuba, Trinity University Department of Computer Science *San Antonio, Texas*

Project: Detecting Image Forgery Using Support Vector Machine and Texture Features
- Achieved 97.7% accuracy for image forgery detection
- Published the work in IDEAL 2023 conference

Other Experience

Teaching Assistant – CSCI 3322 Principles of Algorithms August, 2023 – December, 2023
Trinity University *San Antonio, Texas*
- Held office hours to help students with understanding of material and review
- Graded coursework and provided feedback to students

Teaching Assistant – CSCI 3344 Artificial Intelligence January, 2024 – May, 2024
Trinity University *San Antonio, Texas*
- Held office hours to help students with understanding of material and review
- Helped generate instructions for new projects
- Graded coursework and provided feedback to students

Grant Writing October, 2023
Trinity University *San Antonio, Texas*
- Helped write a NSF grant to get a new HPC for Trinity University

Awards & Honors

Outstanding Junior Research Award 2023
Trinity University

Upsilon Pi Epsilon 2023-Present
Honor Society for the Computing and Information Disciplines

Kappa Mu Epsilon 2022-Present
Mathematics Honor Society

Dean's List Fall 2020, Fall 2021-Spring 2024
Trinity University

Murchison Scholarship 2020
Trinity University