Morgan Byers

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Education

Ph.D. in Computer Science August 2021 - ongoing

University of Colorado - Boulder

Bachelor of Science in Computer Science and Mathematics August 2017 - May 2021

Texas State University

Summa Cum Laude | Honors Thesis: Topological Data Analysis for Anxiety Detection in Text

Publications

Journal Articles

G. Gharooni-Fard, **M. Byers**, V. Deshmukh et al., "A Computational Topology-based Spatiotemporal Analysis Technique for Honeybee Aggregation." NPJ Complexity 1, 3 (2024). https://doi.org/10.1038/s44260-024-00003-1

M. Byers, M. Trahan, E. Nason, C. Eigege, N. Moore, M. Washburn, V. Metsis. "Detecting Intensity of Anxiety in Language of Student Veterans with Social Anxiety Using Text Analysis," Journal of Technology in Human Services, pp. 1 – 21, March 2023. [Online] available: https://www.tandfonline.com/doi/pdf/10.1080/15228835.2022.2163452

Conference Papers

M. Byers, L. Hinkle, V. Metsis, "Topological Data Analysis of Time-Series as an Input Embedding for Deep Learning Models," in The 17th International Conference on Artificial Intelligence Applications and Innovations, Greece, 2022.

M. Byers, V. Metsis, "Text Analysis for Understanding Symptoms of Social Anxiety in Student Veterans," in The Thirty-Fifth AAAI Conference on Artificial Intelligence proceedings of the Undergraduate Consortium, virtual, 2021.

Selected Presentations

Conference Talks

M. Byers, B. Kirkpatrick, N. Skillin, E. Bradley, "Topological Data Analysis of Myoblast Self-Assembly" in SIAM Conference on Applications of Dynamical Systems (DS23), Portland, OR, 2023.

M. Byers, V. Metsis, "The Hidden Shape of Data: Topological Data Analysis for Stress Detection in Text," in Texas State University Honors Thesis Symposium, San Marcos, TX, 2021.

Poster Presentations

M. Byers, E. Garling, E. Bradley, K. A. Gibbs, J. D. Meiss, "The Spatiotemporal Dynamics of *Proteus Mirbilis* Swarming" in Dynamics Days 2025, Denver, CO, 2025.

M. Byers, J. Chittidi, E. Bradley, M. MacGregor, J. D. Meiss, "Computational Topology Techniques for Detecting Exoplanet Signatures" in Dynamics Days 2025, Denver, CO, 2025.

Teaching

CSCI 2270: Data Structures. Instructor of Record (1 semester), TA (1 semester)

CSCI 2275: Programming and Data Structures. TA (1 semester)

CSCI 1300: Starting Computing. TA (3 semesters)

Service

Center for Teaching and Learning (CTL) Lead TA Fall 2024 - Spring 2025