

JORDAN E. TURLEY

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EDUCATION

Johns Hopkins University

Master of Science in Cybersecurity, Focus in Assured Autonomy
Cumulative GPA: 4.0

August 2021 - May 2024 (Expected)
Baltimore, MD

Harvard University

Master of Science in Data Science
Cumulative GPA: 3.79

September 2019 - December 2020
Cambridge, MA

Centre College

Bachelor of Science in Computer Science and Mathematics

Cumulative GPA: 3.67; Computer Science GPA: 3.91; Mathematics GPA: 3.81

Honor Societies: Omicron Delta Kappa (leadership), Pi Mu Epsilon (mathematics)

Honors: Cum Laude, Dean's List, Computer Science Prize recipient awarded to an outstanding computer science major

August 2015 - May 2019
Danville, KY

EXPERIENCE

Johns Hopkins University Applied Physics Laboratory

Software Developer, Associate Professional Staff II

Software Developer, Associate Professional Staff I

Laurel, MD

August 2023 - Present

February 2021 - August 2023

- Co-lead and core team member for major machine learning project. Used convolutional neural networks to perform automatic target recognition in synthetic aperture radar images using a mix of object detection and image classification. Used RetinaNet architecture with nonstandard image augmentations, achieving precision and recall of approximately 80%. Developed image classifier to filter data and reduced false positive rate by a factor of ten with minimal impact to other metrics. Explored training on synthetic data and testing on real data. Selected to present at upcoming Military Sensing Symposium conference.
- Developed explainable AI system using convolutional neural networks to do semantic segmentation in sonar images. Developed explainability model incorporating human logic to match neural network predictions with 3D models of targets. Published paper and presented at SPIE conference.
- Developed software for major target tracking and data fusion engine. Proposed and implemented new features for user interface and data visualization. Gathered input from stakeholders. Participated in weekly stand-ups and code reviews, following agile practices. Use Git to manage code. Wrote front-end code in JavaScript, Angular2, and HTML/CSS. Used D3.js and Plotly for data visualization. Wrote back-end code in Java.
- Proposed internal research project as co-principal investigator involving data fusion and multi-target tracking using convolutional neural networks across different modalities of imagery. Selected for funding beginning in fiscal year 24.

Johns Hopkins University Whiting School of Engineering

Teaching Assistant

• Graded homework assignments and coding projects for graduate-level algorithms and discrete math classes.

• Hosted office hours for programming assignment project questions as well as coding questions regarding student code and bugs.

Baltimore, MD

January 2022 - Present

Activision

Analytics Intern

- Researched and developed new performance metrics for in-game store item recommendations. Visualized high-dimensional data using principal component analysis approach.
- Simulated new recommendation algorithm to be used in upcoming game and analyzed performance metrics, pulling live game data using Spark SQL and writing simulation in Python.
- Built dashboards in Kibana and Databricks visualizing in-game matchmaking health metrics.

Santa Monica, CA (Remote)

June 2020 - December 2020

Centre College

Computer Science and Mathematics Researcher

Mathematics Tutor

- Participated in research to apply co-occurrence data embedding algorithm to Netflix Prize dataset, creating recommender system. Coded algorithm from scratch in C++ and trained using dataset with 100M+ data points. Achieved performance similar to other published algorithms with faster training time and more explainability. Presented poster at 2019 Joint Math Meetings.
- Participated in graph theory research, developing new ways to apply existing graph labelings to new types of graphs. Collaborated with students at Murray State University. Developed parallel computing algorithm to quickly find valid graph labelings and ran algorithm on supercomputer through XSEDE grant. Presented at KYMAA 2019 conference and published paper in PUMP journal.
- Serve as official math department tutor for intro-level statistics and discrete math classes.

Danville, KY

June 2017 - May 2019

August 2018 - May 2019

SKILLS

Software Engineering: Python, Java, C++, JavaScript, PHP, HPC (OpenACC, OpenMP, MPI), SQL, MongoDB, AWS/GCP, Linux, Git

Machine Learning: Tensorflow/Keras, PyTorch, Scikit-learn, convolutional neural networks, explainability

Data Science: Numpy, Pandas, Matplotlib, R, ggplot, MATLAB, STATA, Hadoop MapReduce, Spark, Jupyter

PUBLICATIONS

Jordan E. Turley, Jeffrey A. Dunne, and Zerotti Woods "Explainable AI for Trustworthy Image Analysis", Proc. SPIE 12538, Artificial Intelligence and Machine Learning for Multi-Domain Operations Applications V, 1253809 (12 June 2023); <https://doi.org/10.1117/12.2664001>

Abigail Bigham, Elizabeth A. Donovan, James Pack, Jordan Turley, and Lesley W. Wigglesworth "Prime Labelings of Snake Graphs", The PUMP Journal of Undergraduate Research, 2 (21 August 2019); <https://journals.calstate.edu/pump/article/view/1274>

PRESENTATIONS

"Transforming Detection to Classification for Improved ATR Performance with Targeting Applications", MSS Joint (BAMS and NSSDF), San Diego CA (6 November 2023)

"Explainable AI for Trustworthy Image Analysis", SPIE Defense + Commercial Sensing, Orlando FL (1 May 2023)

"Explainable AI", JHU/APL Intelligent Systems Symposium, Laurel MD (26 October 2022).

Selected for "Best Associate Staff Presentation" award.

"Results on Coprime Labelings of Various Graphs", Kentucky Mathematical Association of America Meeting, Danville KY (30 March 2019)

"A Statistical Model for Learning Movie Preferences (Poster)", Joint Mathematics Meetings, Baltimore MD (18 January 2019)