Ryan Tatton

330.612.2760 · ryan.tatton@case.edu · LinkedIn, GitHub @rtatton
Cleveland, OH

Objective

Passionate student of computer science with diverse experiences in the domains of artificial intelligence and software engineering. Over 4 years of Java, Python, and AWS development experience with a working knowledge of GCP and SQL. A driven learner seeking a career as an applied scientist or machine learning engineer.

Education

Case Western Reserve University — **Cleveland, OH**
M.S. Computer Science candidate, B.S. Computer Science (secondary major), B.S. Biomedical Engineering — *Expected Fall 2022*

- Relevant coursework: Machine Learning, Sequential Decision Making, Probabilistic Graphical Models, Natural Language Processing, High-Performance Computing, Advanced Algorithms, Intro to Data Structures, Software Engineering, Theoretical Computer Science, Linear Algebra, Discrete Mathematics, Multivariable Calculus, Intro to Operating Systems, Data Privacy, Sequential Decision Making

Work Experience

Amazon.com, Inc. (Tax Services) — **Seattle, WA**
Software Development Engineer Intern — *May – Aug 2020, May – Aug 2021*

- Designed an extensible Java library that utilizes Amazon DynamoDB to prevent version conflicts during cross-region database replication that previously cost several weeks of development time to resolve.
- Implemented a deployment pipeline using TypeScript, AWS AppConfig, and AWS CDK to streamline the workflow of modifying, reviewing, deploying, and rolling back application configuration changes.
- Provided well-written technical documentation and thorough oral presentation to demonstrate the value of the developed software to project stakeholders.

ShareTrace — **Cleveland, OH**
Software Engineer and Researcher — *May 2020 – present*

- Developed the Python-based AWS computing backend of the ShareTrace mobile app that analyzes user symptoms and indirect contact with other users to determine risk of infection. Source code: `https://github.com/rtatton/ShareTrace`.
- Development tools include AWS Lambda, Amazon EMR, Amazon S3, Apache Giraph, Jackson, NumPy, Ray, and Joblib.
- Tatton, R., Ayday, E., Yoo, Y., & Halimi, A. (2021). ShareTrace: Privacy-preserving contact tracing with parallel message passing. *ACM Transactions on Spatial Algorithms and Systems*. Submitted for publication.

Hesiod Financial, LLC — **Cleveland, OH**
Software Engineer — *Oct 2018 – Jan 2020*

- Implemented a Flask-based web app using Scikit-learn and Plotly Dash to configure and train machine-learning models to improve portfolio performance. Source code: `https://github.com/Hesiod-Labs/ai.ML`.
- Programmed an internal Java accounting library to securely manage firm transactions using blockchain. Source code: `https://github.com/Hesiod-Labs/Project-Luca`.

Academic Projects

Location-Based Music Recommendation and Streaming Android Mobile App — **Cleveland, OH**
Computer Science Senior Capstone Project — *Feb – May 2021*

- Designed the cloud architecture and Python-based recommendation system using the Spotify API. Source code: `https://github.com/connectfm/cfm`.
- Development tools include Amazon Elasticache for Redis, AWS Lambda, Amazon DynamoDB, Tensorflow, and NumPy.
- Tatton, R., Shao, D., Sfakianos, A. (2021). Context-aware, scalable, probabilistic music recommendation with sampling and clustering. In-progress.

Wearable Stress Measurement System — **Cleveland, OH**
Biomedical Engineering Senior Capstone Project — *Feb – May 2021*

- Reviewed machine learning literature to determine an appropriate technique for predicting ICU patient stress according to user needs and technical specifications.
- Implemented a deep reconstruction classification neural network to predict ICU patient stress in an unsupervised manner using Keras. Source code: `https://github.com/rtatton/ebme380`.

Personalized Truck Rental Service — **Cleveland, OH**
Digital Innovation Course — *Jan – Apr 2020*

- Researched and proposed to Penske Truck Leasing Co., L.P. a novel deep-learning-based approach to improve the personalization of their consumer truck rental services.
- Implemented a unique vehicle-routing algorithm using Google OR-Tools to satisfy customer requirements.

Extracurriculars

Discussions, Undergraduate Research Journal **Cleveland, OH**

Director of Review (Aug 2019 – Apr 2021), Copy Editor (Aug 2017 – Nov 2018) *Aug 2017 – Apr 2021*

- Reviewed and revised 32 undergraduate research articles for fall and spring publications.
- Created formal documentation that explains the review process and guidelines.

Varsity Cross Country Team **Cleveland, OH**

Aug 2017 – Sep 2019