

Toby Kaufman

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EDUCATION

Northeastern University

Boston, MA

Bachelor Degree in Data Science and Biology

2023

GPA: 3.7/4.0, *Magna cum laude*

Activities: Competitive Programming Club, President of Northeastern University Club Esports, Varsity League of Legends Team (National Contenders)

Relevant Coursework: Object-Oriented Design, Algorithms and Data, Large-Scale Data Storage and Retrieval, Machine Learning and Data Mining, Database Design, Discrete Mathematics and Probability

SKILLS

Languages Java, Python, JavaScript/TypeScript, SQL, Bash, R, Racket, C++, YAML

Technologies Git, React, Unix, Docker, MongoDB, Jupyter Notebook, Tableau

WORK EXPERIENCE

Harvard Medical School/Massachusetts General Hospital

Boston, MA

Programming Co-op, Ziv Williams' Lab

May 2020 - Jan 2021

- Developed front-end applications in JavaScript and Python to measure complex reciprocity dynamics for social cognition research
- Engineered statistical analysis pipeline for recorded and simulated reciprocity data
- Implemented noise reduction algorithms such as Principal Component Analysis (PCA) for feature extraction and sorting of neuronal spike data
- Visualized neuronal spike cascades for manual anomaly detection by a clinical expert
- Troubleshoot experimental design and data analysis bugs and errors

DataAnnotation Tech

Boston, MA

Software Development Contractor

Jan 2024 - Present

- Engineered prompts to deliver accurate and serialized data from diverse Web API sources
- Developed APIs to train models in function selection and calling from natural language prompts
- Annotated provided model responses to ensure and maintain coding best practices

PROJECTS

Spotify Song Recommendation Engine

Python/Neo4j

Multi-modal approach to generating novel song and artist recommendations based on Spotify Web API and Kaggle dataset. The models were trained using Spotify-generated feature vectors. A Neo4j graph database was used to visualize the song and artist clusters and increase interactivity. Models backtested against personalized Discover Weekly Spotify playlist generated twice as many novel artist recommendations.

Path-finding Algorithm Visualizer

JavaScript/React.js

Interactive web app to visualize common Path-finding algorithms such as Depth-first search, Dijkstra's, and A*. Users can either create their own maze and weights or generate one with recursive division. Speed of visualization can be adjusted to provide better comprehension and review of the algorithms.