Sean Knight

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Education

Massachusetts Institute of Technology (MIT)   *August 2019 – May 2023 (Cambridge, MA)*
Computation and Cognition (6-9) Major **/** GPA 5.0 out of 5.0
Comparative Media Studies (CMS) Minor and Management Minor
  - Introduction to Computer Science, Fundamentals of Programming, Mathematics for Computer Science, Introduction to Algorithms (includes data structures), Signal Processing, Linear Algebra and Optimization, Introduction to Machine Learning, Design and Analysis of Algorithms, Elements of Software Construction
  - Introduction to Neuroscience, Introduction to Neural Computation, Sensation and Perception, Computational Cognitive Science, Projects in the Science of Intelligence

AI4ALL @ Carnegie Mellon University   *June 2018 – July 2018 (Pittsburgh, PA)*
  - Learned about and implemented numerous machine learning methods with the guidance of Carnegie Mellon professors.

Skills

  - **Languages:** Python, Java, Julia, MATLAB, Shell Scripting (*Bash, PowerShell*), HTML/CSS/SASS/JS, TypeScript
  - **Frameworks and Technologies:** Git, REST (*Express.js, Flask, FastAPI*), WebSocket (*socket.io*), Linux, NoSQL (*AWS DynamoDB*), PostgreSQL, GraphQL, ReactJS, Machine Learning (*TensorFlow, Keras, scikit-learn*)
  - Chinese (Intermediate)

Experience

Undergraduate Researcher @ MIT Brown Lab   *September 2021 - Present*
  - Migrate and develop a Python codebase that helps fit Hidden Markov Models to EEG and LPF data.
  - Utilize computational tools to understand how ketamine can affect neural circuits and rhythms in the brain when used at anesthetic-strength.

Software Engineer Intern @ Red Hat   *June 2021 – August 2021 (Virtual)*
  - Developed the savings planner and reports page on Ansible Automation Analytics which will help individual customers save thousands of dollars on automated computing costs.
  - Developed backend Rest API endpoints (*Django, FastAPI*) and improved the processing of a job statistics pipeline.
  - Worked on unit test migration from Enzyme to React Testing Library.

Software Engineer Intern @ BusySquirrels   *January 2021 (Virtual)*
  - Developed the BusySquirrels browser extension that allowed for seamless visitation cashback and transaction recording. (*ReactJS, GraphQL, Amplify, AWS, Webpack, Polyfill*)
  - Responsible for improving client website experience by developing essential features such as authentication flows.

Machine Learning Research Intern @ MIT Quest for Intelligence Initiative   *June 2020 – September 2020 (Virtual)*
  - Implemented AutoKNN regression algorithm which helped to improve sub-seasonal weather forecasting. The AutoKNN implementation was included in an ensemble that set a benchmark for the US Bureau of Reclamation and NOAA-sponsored Forecast Rodeo II competition.
  - Expanded existing sub-seasonal weather forecasting models to predict on the contiguous US region by updating model report tools, data pipelines, and the models themselves.
  - Mouatadid et al. "An Accurate and Scalable Subseasonal Forecasting Toolkit for the United States." *Microsoft CMT ICML* (2021)

IT and Web Developer @ United Home Technologies   *March 2017 – August 2019 (Washougal, WA)*
  - Developed and redesigned numerous websites as part of company image revitalization and subsidiary launch.
  - Managed servers and domains to keep website, email, cloud storage, and other IoT assets running properly.

Projects (more @ GitHub)

Melodiq @ melodiq.herokuapp.com   *2020*
  - Multiplayer music quiz game that employed the use of the Spotify API and various NLP techniques.
  - Implemented with ReactJS, ExpressJS, WebSocket, REST and deployed on Heroku.