SARAH WATSON

sawatson1@gmail.com | 678-699-9104

LINKS

LinkedIn: / sarah-watson-5a1730110
Github: / swatsonadair
Portfolio:
sawasurfaceintervals.com

EDUCATION

M.S. Computer Science

Georgia Institute of Technology
Atlanta, GA | May 2020
Specialization in Robotics & Perception
GPA: 4.00/4.00

B.S. Computational Media

Georgia Institute of Technology
Atlanta, GA | May 2011
Double Minor in French and Spanish
Highest Honor
GPA: 3.87/4.00

COURSES

Artificial Intelligence, AI for Robotics, Computability Complexity & Algorithms, Computational Photography, Computer Vision, Human-Computer Interaction, Knowledge-Based AI, Machine Learning, Machine Learning for Trading, Reinforcement Learning

TOOLS

Python, Scikit-Learn, OpenCV, Tensorflow, Keras, NumPy, SciPy, Pandas, Matplotlib, R, Java, C, Git, Mercurial, Docker, SQL, MySQL, PostgreSQL, PHP, D3.js, Node.js, Vue.js, Laravel

PROJECTS

Deep Learning & Robotics

- Applied a Deep Q-Network (DQN) that combines reinforcement learning with a deep neural network to train a "lunar lander" AI agent using Tensorflow
- Implemented robotics systems for autonomous vehicles: localization (SLAM, Kalman/ Particle filters), planning (A* Search, MDPs), and motion control (PID)

Computer Vision

- Implemented computer vision algorithms to identify traffic signs, track pedestrians, detect faces, and assemble augmented reality videos using Python and OpenCV
- Developed/trained a machine learning model to classify video of human activities
- Applied machine learning techniques to classify letters with Scikit-Learn neural networks, SVMs, decision trees & forests, KNN, PCA, ICA, and K-means clustering

Predictive Algorithms

- Implemented a 2020 Presidential Election prediction model that generates Monte Monte Carlo simulations on 270toWin (https://www.270towin.com)
- Trained predictive Q-Learning models for stock trading situations in Python

WORK EXPERIENCE

Software Engineer | Encompass Digital Media (Defense Visual Information Distribution Service)

Atlanta, GA (remote since Sept 2017) | Jan 2015 - Present

- Worked within an Agile software development team on a full-stack web application for media storage and transmission using PHP (Laravel), MySQL, and Vue.js
- Programmed a RESTful API to generate an automated reporting system of media downloads, fingerprint/watermark broadcast detections, and audience metrics from MySQL and AWS Redshift PostgreSQL databases
- Implemented data visualizations for the reporting system using JS charting libraries to deliver interactive graphs, charts, and maps for data analysis
- Created a back-end workflow and front-end UI for progressing media entries through the annual DoD Media Awards contest

Sr. Web Developer | Blue Key Interactive

Atlanta, GA | March 2014 - Aug 2015

- Developed APIs for web and mobile applications using PHP/MySQL
- Implemented third-party e-Commerce and social media APIs
- Programmed custom plugins for WordPress to enhance website functionality

Sr. Web Developer | Eclipse Web Media

Atlanta, GA | May 2011 - Jan 2015

- Programmed custom content management systems and social media platforms
- Created and maintained MySQL databases for web applications
- Developed responsive-design websites using WordPress

College of Computing Student Assistant | Georgia Institute of Technology

Atlanta, GA | May 2009 - Sept 2011

- Instructed workshops on animation software and LEGO NXT robotics
- Developed an educational website of tutorials on ALICE 3D animation software
- Created an Arduino wearable computer project for high school workshops