Jimmy Van Hout

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Rockville, MD

Software engineer specializing in full-stack web development, application security, and custom software for enhancing operational efficiency.

Education

University of Maryland, College Park, MD, *May 2022*

- **Bachelor of Science in Computer Science**
- Minor in Spanish Language, Culture, and Professional Contexts

Experience

Software Engineer

ScheduleAI, *June 2023 - Present*

- Founded and develop a SaaS web application company based on a proprietary artificial intelligence algorithm for automated employee scheduling
- Develop backend using Python, Flask, Amazon Cognito API, Stripe API; frontend using JavaScript, HTML, CSS
- Implement server-side user authentication and authorization, including the use of OAuth 2.0, Amazon Cognito, JWTs, and cryptographic libraries
- Develop HTTP REST APIs for programmatic access of data
- Ensure security through adherence to software development best practices, thorough testing, and adoption of recommended security best practices such as CISA Secure by Design and NIST Secure Software Development Framework (SSDF)
- Test and deploy to EC2 instances hosted on AWS

Skills

- **Programming Languages**: Python, JavaScript, C, Java
- **Web**: Python, Flask, JavaScript, HTML, CSS, Amazon Cognito, Amazon SES, Stripe
- **Cloud Computing**: AWS (including EC2, Cognito, and SES), GCP, and Azure
- **Security**: Authentication and authorization, OAuth 2.0, JWTs, cryptographic libraries, CISA Secure by Design, NIST Secure Software Development Framework (SSDF)

- **Parallel and Multithreaded Programming**: HPC cluster at UMD, MPI, OpenMP, CUDA, Hatchet, Python `multiprocessing` module, Java `Thread` library
- **Databases**: PostgreSQL, SQLite
- **Version Control**: Git, GitHub
- **Operating Systems and Shells**: Linux (Debian, Ubuntu, Raspberry Pi OS), Mac, Bash

Selected Technical Projects

OTFitnessData.com and **OTF Data**
Python, JavaScript, CSS, HTML
Website (retired) and Python-based program used together to extract, analyze, and present workout data for Orangetheory Fitness members.
OTFitnessData.com on GitHub | OTF Data on GitHub

SimpleWeather.net
JavaScript, HTML, CSS, JSON
Minimalist website for checking the weather forecast, using data from the Weather.gov API (please be aware their API does not always provide all requested data).
simpleweather.net

Parallelization of the Game of Life
C
Parallel implementation of the game of life using MPI.
Description: https://www.cs.umd.edu/class/fall2021/cmsc416/assignment1.shtml

Bioinformatics Algorithms Related to DNA Sequencing
Python
Implementation of various bioinformatics algorithms related to DNA sequencing including calculating minimum skew, the Knuth-Morris-Pratt algorithm, cyclopeptide sequencing, and global alignment.
Descriptions: https://rosalind.info/problems/list-view/

Artificial Intelligence Applied to Pacman
Python
Implementation of AI techniques such as single-agent search, multiple-agent search, and reinforcement learning to automate Pacman.
Descriptions: http://ai.berkeley.edu/project_overview.html