THOMAS HARRISON

SOFTWARE DEVELOPER

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MALTSANDCINO

SKILLS & ABILITIES

- Python for command-line tool development
- Back-end web-development with Django, including the Django ORM database functionality.
- Front-end design with JavaScript/CSS/HTML
- Data manipulation and algorithm design
- CLI, GIT, VSCODE and other IDEs
- SOAP and REST API integrations

RECENT PROJECTS

Climapulse Service SAAS
Python (Django), JavaScript (React)

Maintenance and feature development of a large SAAS service designed to facilitate maintenance, service, and audits of HVAC systems. Automation of record submissions to relevant governmental agencies. This project was split into two elements: a service side and a client side, each with details shaped specifically for the type of user. This was a very large codebase (built over multiple decades).

API Microservice
Python (FASTapi)

A microservice designed to facilitate API communication between two SAAS systems, enabling automation of task creation and updates in service both systems.

Veterinary Booking and Management System
Python (Django), JavaScript, SQLite

A web-application designed for multi-vet clinic staff designed to automatically choose a doctor and provide an applicable time slot for new bookings based on the complexity of the case. Patient and owner data management, doctor appointment data/schedules, and appointment management are all handled by the database.

Sentiment Analysis API
Python (NLTK), JavaScript

A web-tool designed to analyze user input for sentiment, returning color-coded strings based on the positive or negative sentiment score for each sentence. Each user message is tokenized into sentences that can be handled by NLTK's VADER module for sentiment, and a customized neural network trained on a large dataset of sarcastic utterances in order to determine if a sentence is likely to be sarcastic.

Assembler
Python, Assembly, Machine Language

Fully developed a python-based command-line tool to parse and convert human-readable assembly instructions into useable 16-bit machine language for a CPU simulator.

EDUCATION

Computer Science 50, CS50: Web Programming, and CS50: Introduction to AI with Python
Harvard Extension School — Spring 2023 to Spring 2024

These three courses offered by Harvard's Extension School provided a great background on programming paradigms, best practices, logic, and data structures and algorithms. The second of the courses focused on web development with Python and JavaScript, looking at concepts such as UIs and particularly SPAs, as well as Relational Databases, Testing, CI/CD and Scalability. The final course focused on developing and implementing AI algorithms for propositional logic, optimization, and learning (examples being Q-Learning, Hill-Climbing, Back-Tracking in graphs) as well as using existing Machine Learning libraries to create neural networks and to work with LLMS (in particular, with things like HuggingFace's transformers library and TensorFlow's keras API). All three courses were project driven.

BS Computer Science (Prospective)
IU International University, Germany — 2022 - Present

The coursework for this program has included courses in theory such as computer architecture, data structures and algorithms, mathematics (especially probability and proofs), SQL, as well as Java development. This is an online part-time program, with flexible semesters.

Master of Science in Education
Niagara University, NY, USA — Sept. 2011 – Dec. 2012

A master's and teacher's education program at Niagara University in Niagara Falls, NY. I focused on language instruction at the secondary level. This program involved a variety of educational and statistical theory, as the program was a data-driven, constructivist approach. This program also included several long-term, in-situ practicums.

EMPLOYMENT

Software Developer
Climapulse, Hasselt — Jan. 2025 – Present

Duties involve the maintenance and development of a large SAAS codebase. Some of my recent responsibilities were the facilitation of report submissions to relevant HVAC authorities, security updates following PEN-testing, the establishment of a microservice for inter-SAAS communication, and general development of many other features and issues in the software. My personal efforts allowed numerous companies active in specific regions to remain compliant with both SLAs and government regulations.

Mail Courier
B-Post, Hasselt — Oct. 2022 – Dec. 2024

Duties include the delivery of mail, parcels, packages, communication with customers, problem-solving and complaint resolution.

Public School Teacher
Grand Erie District School Board, Ontario, Canada — Sept. 2015 – Aug. 2022

Duties included problem-solving, planning and implementation of lessons at various levels, classroom and behavioral management, resource development, and the increasing use of educational software suites. My courses incorporated software and technology beyond a platform for learning, but as learning (for example, via the gamification of language learning, and the composition of music). Via the introduction of optional language goals for students, I significantly increased the out of classroom use of L2 media and materials.