THOMAS HART

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SKILLS

Languages: C++, Java, Python, C, Rust, HTML, CSS, JavaScript, VHDL, ARM Assembly, LaTeX
Frameworks/Libraries: Langchain, Android SDK, AOSP, React.js, Django, scikit-learn, Cohere, LibGDX, SeaHorn
Tools: Linux, Git, GitHub, CMake, VS Code, Android Studio, Visual Studio, JIRA, Confluence
Hardware: Arduino, Raspberry Pi

EXPERIENCE

Founder

AI Docs · Jan. 2024 to Present · Vancouver, BC

- Spearheading the development of an innovative AI-powered tool aimed at automating the process of writing codebase documentation, designed to streamline software development processes and enhance developer productivity.
- Leveraging prompt engineering and fine-tuning techniques to ensure the tool delivers consistently accurate and detailed documentation.
- Implementing integrations with platforms like GitHub to seamlessly and automatically update documentation with every code change.
- Engaging with potential customers to identify common issues in existing documentation, using feedback to shape a feature roadmap.

Research Assistant

University of Waterloo · May 2023 to Aug. 2023 · Waterloo, ON

- Collaborated with a team of researchers supervised by professor Arie Gurfinkel to verify Rust code using the SeaHorn verification framework.
- Investigated alternatives to the Rust standard library vector class to improve runtime performance of verification jobs.
- Demonstrated the effectiveness of the SeaHorn framework by creating jobs to identify critical errors in old versions of popular Rust crates.
- Developed a custom Python script to automate the generation of boilerplate code for verification jobs, improving development times.

Software Engineer

Peraso Technologies · Sept. 2022 to Dec. 2022 · Toronto, ON

- Contributed to the development of firmware and internal tools for 5G radio devices using C++ as a member of the Device Software team.
- Designed a custom XML parsing and generation tool that streamlined the input of data into an EEPROM programming application.
- Enhanced the stability of CLI code by improving error checking and eliminating crashes caused by invalid user input.
- Revised various CLI commands to optimize output clarity and eliminate redundant information, resulting in improved usability for end users.

Autonomous Vehicle Android Developer

Ford Motor Company · Jan. 2022 to Apr. 2022 · Remote

- Built high-quality Android applications for an in-vehicle infotainment system using Java, ensuring optimal performance and user experience.
- Demonstrated technical expertise by utilizing hidden AOSP classes to successfully implement a key feature, despite minimal documentation.
- Migrated key features to the latest version of Android, enabling the adoption of new technologies and ensuring long-term compatibility.
- Followed industry best practices, applying sound development methodologies to write clean, efficient code and documentation.

PROJECTS

Finance Translator (Python, Django, Cohere, HTML, CSS)

- Developed a web application using Django that simplifies complex financial text using NLP with the Cohere API.
- Implemented a trie-based search algorithm to quickly identify relevant keywords in the text and provide links to corresponding definitions.
- Designed a feature to display real-time stock prices for companies mentioned in the input text, using the TradingView API.

Arduino Stock Ticker Display (Arduino, C++, Python)

- Developed a real-time stock ticker display utilizing an Arduino Uno WiFi, delivering the latest prices via a connected LCD display.
- Created an algorithm to perform period calls to the Yahoo finance API, while allowing for a user defined portfolio of stocks.
- Created a Python script to automatically update code when a user changes their portfolio, eliminating the need for intricate updates.

Crypto Terminal (Python)

- Designed and developed a user-friendly Python command line application to check various cryptocurrency statistics.
- Utilized the Coin Gecko API to request real-time price data for the top 1000 cryptocurrencies, providing users with up-to-date information.
- Employed the mechanize and beautifulsoup4 libraries to scrape Minerstat, enabling users to check current profitability of mining hardware.

EDUCATION

University of Waterloo · Sept. 2021 to Apr. 2026

Candidate for Bachelor of Applied Science in Computer Engineering | GPA: 3.78

Relevant Courses: Algorithms and Data Structures (C++), Systems Programming and Concurrency (C), Numerical Methods (C++)