# Jacob Furtaw

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## Skills

**Machine Learning/Data Science**: Python, PyTorch, TensorFlow, **Langchain**, **Llama-Index**, Ollama, Scikit-Learn, Pandas, Numpy, HuggingFace, Transformers, Data Preprocessing, BeautifulSoup, Synthetic Data Creation, Hyperparameter Tuning
**Environment/Version Control**: **Git**, SVN, **Conda**, **Docker**, Linux, Virtual Machines, Jupyter, VS Code, PyCharm, Nvidia AI Workbench
**Familiar With:** C++, Javascript(Node.js), React, MongoDB, SQL, Flutter
**Personal**: Problem Solver, Team-player, Self-starter, Innovator, Outgoing, Forward Thinker

## Education

**Bachelor of Science in Computer Science, Software Engineering Concentration**          Jan 2022-Dec 2023
Towson University, Towson, MD

- **Related Coursework**: Artificial Intelligence, Database Management Systems, Software Quality Testing & Assurance, Data Structures and Algorithms, Requirement Analysis and Modeling, Web Programming

**Associate of Science in Computer Science**          Aug 2019-Dec 2021
Howard Community College, Columbia, MD

- **Related Coursework:** Intro to Python, Intro to C++, Advanced C++

## Work Experience

**Machine Learning Engineer**
SurgePoint Software          Aug 2023-Present

- Developing an innovative AI Assistant using cutting-edge open-source LLMs like Mistral 7B, NeMo 12B, and Llama 3.1 8B
- Utilizing self-taught **data engineering** and **data preprocessing** skills to craft a 13-million-line dataset of web-scraped data
- Implementing **Retrieval-Augmented Generation** to inject my dataset and increase semantic relevance scores to combat model hallucination
- Leveraging self-taught **prompt engineering** skills to ensure the model has a well-structured prompt and enough context to clearly and concisely answer any query a user might input

**Advanced Repair Agent**
Geek Squad          Mar 2022-Present

- Earned a Letter of Recommendation from Upper Management for designing and helping to implement a plan to revamp our locations day to day operations, increasing overall productivity and customer satisfaction
- Executing tens of thousands of Software and Hardware fixes on desktops, laptops, tablets, and cell phones
- Receiving an award for Top Performing ARA at our location every quarter and was in the top 3% in our District and Region

## Academic Experience

**Machine Learning Project**          Jan 2023-May 2023
Towson University, Towson, MD

- Excelled as a member of a Scrum Team, engaged in sprint planning, daily standups, and sprint reviews
- Investigated and implemented the use of a transformer-based model for the task of binary classification
- Optimized data preprocessing, added and tuned hyperparameters, and increased overall performance
- Condensed research and outcomes were into a comprehensive formal report my team presented at a campus research fair

**Oceans**
Towson University, Towson, MD          Aug 2023-Dec 2023

- Engineered and Deployed a fully functional social media platform using the MERN stack with a team of four
- Designed and Integrated features such as user searching, post creation and display algorithm, front-end design
- Orchestrated weekly meetings and feature implementations with the use of sprints and Trello boards

## Awards

**Towson Startup**: Secured $1,000 at the Towson College Cup Startup Pitch Competition, Awarded $10,000 and a spot on the Summer 2024 Startup Incubator