Braden Everson

bradeneverson@gmail.com | (608) 628-0067
linkedin.com/in/braden-everson | github.com/BradenEverson

SUMMARY

B.S. Computer Science student at MSOE with internship experience working as a full stack software engineer as well as numerous diverse hands-on team-based project experiences. Devoting 10 hours per week to personal projects in addition to 20 hours per week working part time as a hybrid machine learning engineering intern while maintaining a full academic schedule. Skills in Rust, C, C++, Python, Data Science, and Machine Learning.

EDUCATION

B.S. Computer Science | Milwaukee School of Engineering | GPA: 3.89 | Exp. 06/2027

M.S. Machine Learning | Milwaukee School of Engineering | Exp. 12/2027

INTERNSHIP EXPERIENCE

Milwaukee Turners – Machine Learning Engineering Intern **February 2024 – Present**

- Decided and interpreted best fit Machine Learning model choice for given problems for specific projects.
- Developed a web crawling transcription script from scratch that can accurately create text interpretations of audio from video meetings.
- Contributing to the open-source community by developing a Natural Language Processing crate in rust for internal use.
- Utilizing Natural Language Processing to take transcripts and trim, lemmatize and further tokenize sentences into machine readable data.
- Developing a Bayesian Sentiment Analysis library for taking tokenized sentences with pre-assigned classifications and generating probability maps for tokens falling within a class, created a linear regression based on a sequence of these tokens and their respective probabilities.

HIR Wellness Institute – Mobile App Developer Intern **September 2023 – December 2023**

- Developed React Native mobile application for internal company scheduling of interns.
- Created interface between Firebase NoSQL database and JavaScript frontend.
- Created database schema depicting hierarchy of users with varying rights and access levels.
- Implemented Google Maps and Apple Maps API to create a real time map of all nearby events posted by administrators.

FitX On Demand – Full Stack .NET Developer Intern **January 2023 – August 2023**

- Developed cloud based IoT solution for remote access QR codes that can scan into fitness content.
- Implemented secure zone identifier that bans video access if scan location is out of range from the designated hotel/gym.
- Leveraged AWS s3 buckets to host video content securely with limited endpoints open.
- Developed data visualization through QR code scan location statistics on a map along with dynamic QR code disabling based on how much variety these scan locations carried.

BrightBean Labs – Full Stack .NET Contract Developer **November 2020 – January 2023**

- Developed Asp.Net web applications and Xamarin Forms mobile applications for clients seeking unique software solutions in the .Net space.
- Developed Denver Health DHREM scheduling platform: an Asp.Net built application providing continuously integrated scheduling services in real time for Denver Health resident interns.
- Used Xamarin forms and MVC architecture to develop an IoT mobile solution for smart truck engine warmers that could be dynamically controlled through the app.

TECHNICAL SKILLS

Rust	C	C++	CUDA	Go
Asp.Net	Cargo	Git	Java	Python
Jupyter Notebooks	NodeJs	React	GitHub	Probabilistic ML
Data Visualization	Sentiment Analysis	NLP	OpenCV	SQL
Big Data	IoT	C#	Unit Testing	Python
TensorFlow	Keras	Pytorch	Embedded Systems	Esp32

PERSONAL PROJECT EXPERIENCE

Machine Learning Drones – Embedded Deep Learning |Team of 4 **January 2024 - Present**

- Developing and implementing a fully autonomous drone that could respond to hand signals for motion.
- Modeled and developed the convolutional neural network computer vision and path decision systems responsible for the drone's flight pattern.
- Developed a lightweight embedded Rust library based off existing deep learning crate that can parse precompiled weight/bias models and forward propagate a convolutional neural network on the embedded level.
- Implemented a lightweight file format for hosting machine learning models on memory intensive embedded systems containing serialized model weights, biases, activation functions and layer types.

Open-Source Machine Learning Library in Rust from Scratch | Independent **October 2023 - Present**

- Developed a library in Rust for easy and simple neural network development in the rust ecosystem. Triton aims to be the equivalent of Python libraries such as Keras for the Rust programming language, using Traits and zero cost abstractions.
- Using knowledge on Rust's rich Enum type and Traits system, created a plug and play style neural network that can morph abstract data to fit the layers as it travels down the network.
- Implemented Dense and Convolutional layers, Minibatch Gradient Descent, dynamic data manipulation and data visualization helper methods all completely from scratch.
- Contributed to the open-source community and posted code as a unit tested and constantly maintained library with over 2,500 downloads.

Large Language Model Fine Tuning in Rust | Independent **July 2023 – August 2023**

- Fine tuned a downloaded copy of the GPT-2 model using input sample data generated from romcoms and dating show scripts to create a model specifically aimed at generating reality TV.
- Developed wrapper interface in Rust that would generate 'contestants' for dating show, procedurally generated personality traits based on a noise map generated over a list of attributes.
- Utilized Fine Tuned GPT Model to generate the scripts with respect to contestant names and personalities, along with the type of event the script would be acting out.
- Created frontend through the Unity Platform, procedurally generated contestant models with a 2.5D effect while contestants acted out the AI generated scripts.

SCHOOL PROJECT EXPERIENCE

MSOE Honors Community Project – Generative AI for Demolished Buildings | Team of 5 **September 2023 - Present**

- Developing a generative adversarial network that can generate predicted 3D renders of buildings from the Milwaukee Bronzeville area that have been demolished based on rough blueprints generated by historical fire maps.
- Created a parallelized web scraping Rust script that downloads 1200 3mb Milwaukee area fire map files from the UWM archive.
- Generated training data based off fire maps through segmentation algorithm that uses image processing to generate geometries of every building displayed in fire map using a convolutional neural network.
- Teaching model based on fire maps as training inputs and human generated 3D models of 10 buildings.

Senior Capstone – Smart IoT Gardening Systems | Independent **September 2022 – June 2023**

- Developed an IoT gardening device powered by an Esp32 responsible for collecting data on moisture, humidity and deciding how much sunlight and water to supply the plant as a result.
- Created an online web API built on NodeJs that compiled C code as a module and generated a JSON response based on the sensor readings the Esp32 would supply in the GET request.
- Used TensorFlow in C to train a model based on web scraping gardening tip sites to create a Recurrent Neural Network that could take in 3 input nodes for plant-type, moisture and sunlight and respond with a 2-node output layer depicting percentage of water necessary and percentage of sunlight necessary.

COCURRICULAR/LEADERSHIP POSITIONS

MSOE Machine Learning and AI Club | Research Group member **September 2023 – Present**

MSOE Drone Club | Founding member **January 2024 - Present**