

Ryan Brennan

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Computer Science Student Committed to Communicating Technology's Potential to Diverse Audiences

Skills & Interests

Programming and Frameworks: C#, Java, C++, Python, Django, SpringBoot, TensorFlow, NumPy

Other Technical Skills: Model-View-Controller (MVC), SQL, Assembly Language (MIPS)

Soft Skills: Teamwork, Adaptability, Critical thinking, Leadership, Communication

Tools: GitHub, Microsoft Office, Google Workspace, Visual Studio, MS SQL Server, Jupyter Notebook, Anaconda

Activities and Awards: President Walker Award, President Sparks Award, Past PSU Harrisburg Coding Club Secretary

Education

Penn State University – Capital College

BS, Computer Science. 3.99

Minor, Mathematics

Harrisburg, PA

Aug 2021 - May 2025

Coursework

Relevant Courses: Data Structures, Algorithms, Probability and Statistics, Matrices, Object-Oriented Programming with Web-Based Applications, Software Engineering and Design, Databases, Machine Learning, Graph Theory, Graphic Design, Operating Systems, Applied Regression Analysis

Work Experience

Machine Learning Intern, Department of Homeland Security

May – August 2023 & May – August 2024

- Learned machine learning techniques and applied them to develop models for enhancing security.
- Utilized advanced methods and deep learning to improve data analysis and model performance.

Projects

Three-Dimensional Autoencoder

- Designed a 3D autoencoder to convert CT x-ray luggage scans into a TFRecords dataset
- Leveraged the model for efficient data compression and reconstruction, enabling the analysis of different latent space representations

Capstone Project: Parking Permit System

- Developed an Android app for license plate detection using YOLO and Google ML Kit, connected to a real-time database.
- Implemented a web interface with CRUD operations for admin management.

Facial Similarity/Recognition System

- Created a facial recognition system using YOLO for face detection and ResNet for feature extraction
- Implemented FAISS to efficiently manage and search facial feature vectors in a database

Spring Boot Web App Bookstore

- Built a Spring Boot MVC web application for an online bookstore
- Managed data with Spring Data JPA and secured user authentication through Spring Security

Binary Classification Model Development

- Created binary classification models for detecting chemical analytes, optimizing data efficiency
 - Evaluated models like Random Forest and CNNs to determine the most accurate approach
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