Brayden L. Pettigrew

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EDUCATION

The Pennsylvania State University May 2025
Bachelor of Science in Computer Science *University Park, PA*

GPA: 3.89
Relevant Courses: Data Structures and Algorithms, Operating Systems, Computer Organization and Design, Discrete Mathematics

WORK EXPERIENCE

Penn State Mushroom Research Center April 2024 – Present
Software Engineer *University Park, PA*

- Led the development of the Cropsmarts React Native app for efficient data input and interpretation by mushroom farmers.
- Utilized Node.js and Express.js to implement JWT authentication and handle requests from the mobile application.
- Enhanced the application by integrating a new data input feature, increasing the average input speed by 50%.
- Received positive feedback from a team member who noted significantly faster development progress since joining the team.

SlideSmart (NAIC) August 2024 – Present
Software Engineer *University Park, PA*

- Led a team in the Nittany AI Challenge, coordinating meetings, setting milestones, and ensuring effective collaboration.
- Designed SlideSmart, a software tool aimed at enhancing PowerPoints with supplementary resources and YouTube videos.
- Planned to fine-tune existing LLMs to improve the software's ability to provide relevant enhancements to slides.

Wild Ginger III September 2018 – August 2024
Server/Host *New Hope, PA*

- Spearheaded training for 10+ staff members, investing 8-12 hours each to integrate strong contributors into the team.
- Multitasked effectively by managing several customers in a fast-paced environment, creating a seamless dining experience.
- Collaborated productively with other restaurant staff, leading to a high level of service and guest satisfaction.

PROJECTS

Food Vision Mini July 2024 – August 2024

- Engineered and fine-tuned an EfficientNetB2 feature extractor model for food classification with PyTorch.
- Achieved a high prediction accuracy of 96.88% through thorough training, validating, and testing the model.
- Visualized model performance and results using Matplotlib, creating informative plots to analyze accuracy and loss.

Bella Vita Mobile App May 2024 – July 2024

- Developed a family-based social media app with core social media features using React Native, JavaScript, and Firebase.
- Integrated Firebase Realtime Database, Cloud Storage, and Firestore for efficient data management and real-time updates.
- Received positive feedback from 11 users who preferred using Bella Vita for its ease of use and superior functionality.

Multi-threaded Communication Channel Project February 2024 – March 2024

- Developed a multi-threaded communication channel library in C, enabling inter-thread communication.
- Utilized mutexes and condition variables for thread synchronization, ensuring thread safety.

Memory Management Project January 2024 – February 2024

- Implemented a custom memory management system in C, including memory allocation, reallocation, and free functionalities.
- Enhanced performance and organization with an embedded segregated linked list structure and footer optimizations.
- Eared a perfect score of 100/100, surpassing the class average of 41.9/100 and demonstrating exceptional proficiency.

Mini CPU October 2023 – November 2023

- Implemented a foundational data path architecture using Verilog, integrating pipelining for concurrent instruction execution.

EXTRAS

Skills: Python, SQL, C, Verilog, JavaScript, TypeScript, HTML, CSS**,** Git, React, React Native, Firebase, PyTorch
Certifications: React Native via Udemy, PyTorch via Udemy
Club Memberships: Google Developer Student Club, Nittany AI Student Society
Scholarships: Penn State Provost Award