

# Nicholas Wade

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## EDUCATION

### Purdue University

West Lafayette, IN

*B.S Computer Science, Cert. Entrepreneurship & Innovation*

*Aug. 2021 - Expected May 2025*

**Relevant Coursework:** Artificial Intelligence, Robotics, Data Mining & Machine Learning, Probability, OOP, Multivariate Calculus, Discrete Mathematics, Web Information Search & Management, Systems Programming, Statistics, Analysis of Algorithms, Data Structures & Algorithms, Entrepreneurship

**Awards:** Purdue Vertically Integrated Projects Leadership Award For AIMM ICC Team

**Extracurriculars:** Machine Learning @ Purdue Project Manager, AIMM Lab ML Team Lead

## EXPERIENCE

### SWE @ Capital One | Richmond, VA

Incoming Aug 2025

- I will be joining Capital One as an associate software engineer in August 2025 after completing college!

### Data Analyst Intern @ BDO Digital | Python, Machine Learning, C#, Data Engineering Jun 2023 - Dec 2024

- Built a synthetic data generator to boost CV model accuracy by 15% to 85% by generating 5k labelled images
- Predicted factory accidents using computer vision, depth estimation, & path prediction algorithms
- Developed an internal application for data labeling, model training, real-time data ingestion & data visualization
- Wrote a Flask API to control a demo factory assembly line, enabling real-time operations & data analysis
- Contributed to GPT-4o RAG chat bot for summarizing, Q&A, & classifying medical/legal documents
- Wrote Python notebooks to manipulate client data into Microsoft Fabric for advanced data reporting & analysis
- Led a team of interns in researching & presenting new business opportunities in AI to upper management

## PROJECTS

### AIMM ICC Lab | Machine Learning Team Lead | Python, OpenCV, CUDA, ROS, Docker Nov 2023 – Present

- Led 6 person ML team to develop an autonomous boat to compete in navigation challenges
- Trained YOLOv8 on 2k images of buoys for multi-object detection & tracking
- Wrote 65ms RGB-D camera ingestion, object detection, & object localization pipeline on NVIDIA Jetson
- Built a Gazebo simulation of competition environment for navigation pipeline testing
- Co-authored a **Technical Report** outlining the labs developments

### Celerity | Solana Trading Platform Developer | Python, MongoDB, Flask, Azure, CI/CD Jan 2024 – Jul 2024

- Solely developing a Solana network trading platform able to execute trades in 200ms @ **celerity.bot**
- Built custom RESTful API wrappers for Jupyter, Dexscreener, CoinGeckoTerminal, & Raydium
- Achieved over 100 MAU as of May 2024 with trading volume exceeding \$100k/700SOL
- Created 15 async Flask API endpoints with JWT authentication hosted as Azure Functions
- Maintaining an 11.5k line Python code base, concentrating on performance & streamlined documentation

### VEX Robotics AI Competition | ACM SIGAI Team Lead | Python, C#, Unity 3D, C Aug 2021 – May 2023

- Team built an autonomous robotic agent able to navigate & compete in the VEX challenge
- Designed reward system & trained an RL agent in a Unity3D simulated environment
- Wrote a protocol in C to connect camera, motors, NVIDIA Jetson, & VEX brain
- Trained YOLOv5 CV model with multiple pre-processing OpenCV filters for enhanced accuracy
- Co-authored **Pac-Man Pete: An extensible framework for building AI in VEX Robotics**

## TECHNICAL SKILLS

**Languages:** Python, C#, SQL, C, Java, C++, Bash

**Tools & Platforms:** Git, VS Code, Jupyter Notebook, Azure, MongoDB, Google CoLab, UNIX, Docker, GitHub Workflows/Actions, Unity Game Engine, Gazebo

**Frameworks & Libraries:** TensorFlow, PyTorch, Pandas, Numpy, SK-Learn, Matplotlib, OpenCV, Ultralytics, Flask, Pydantic, Sphinx, OpenAI, Unity ML-Agents, Anaconda

*Last Updated: August 2024*