

Will Krzastek

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EDUCATION

University of Notre Dame

Notre Dame, IN

Bachelors of Science in Computer Engineering

Expected: May 2027 | GPA: 3.7

Coursework: Data Structures, Discrete Math (**TA**), Logic Design, Systems Programming, Embedded Systems

Activities: Notre Dame Rugby Team, Notre Dame Rocketry (**NASA 2024 USLI Winner**), Quant Club

PROJECTS

Choose Your Hooper | *React.js, Express.js, Node.js, MongoDB, AWS, RESTful API*

- Developed and launched a full-stack website for crowdsourced fantasy basketball with **2,500+** active users
- Implemented a rankings page, trade calculator, and keep/trade/cut game to increase user engagement by **65%**
- Built a scalable frontend (**React.js**) and RESTful API (**Node.js/Express.js**), ensuring seamless integration
- Architected a **MongoDB Atlas** database with efficient indexing, integrated with **AWS** for scalability

Crypto Guardian | *Next.js, TypeScript, Python, Flask, ARIMA, CoinGecko API*

- Built a full-stack web app with **Next.js** to provide users with a safety assessment of cryptocurrencies
- Calculated a safety score (out of 100) using token vesting schedules, liquidity metrics & GitHub activity
- Deployed predictive models (**LSTM, ARIMA, Prophet, GRU**) via Flask for real-time forecasting
- Developed interactive graphs allowing users to explore historical data, predictive trends & detailed safety metrics

Minitorch | *Python, Numba, CUDA, Parallel Computing, LSTM, ResNet, NLTK, Streamlit*

- Built a deep learning library from the ground up w/ **autodifferentiation, backpropagation**, & custom **tensors**
- Reduced training time by **85%** through **parallel processing** and **CUDA acceleration**
- Designed neural networks with matrix multiplication, gradient-based optimization and **tensor broadcasting**
- Integrated advanced layers including **1D/2D convolutions** and pooling mechanisms for feature extraction
- Earned an invitation to publish the work in [Ready Tensor AI's 2024 Computer Vision Expo](#) by training an **AI Image Captioning** model with Minitorch, achieving an average loss of **2.42** on the final epoch

EXPERIENCE

Discrete Math Teaching Assistant

August 2024 – Present

University of Notre Dame

Notre Dame, IN

- Held weekly office hours and recitations for **70+** students, answering questions and re-teaching material
- Graded weekly problem sets and exams, providing feedback on set theory, number theory & graph theory proofs

Apogee Control Systems Engineer

February 2024 – Present

Notre Dame Rocketry

Notre Dame, IN

- Wrote hardware-in-the-loop simulations and fail-safe flight software including device drivers, state detection, Kalman filtration, and PI control algorithm to actuate drag flaps
- Contributed to **1st place win** (of 49) in NASA's 2024 Student Launch Competition with a **0.02%** apogee error

Event Ambassador

February 2024 – August 2024

Notre Dame Student Activities Office

Notre Dame, IN

- Led the coordination and management of special events, ensuring safety protocols during emergency situations
- Managed **20+** high-profile events at Notre Dame, delivering exceptional customer service

TECHNICAL SKILLS

Languages: Python, C/C++, JavaScript, TypeScript, HTML/CSS, SQL, MATLAB, Bash/Shell

Frameworks: React, Next.js, Node.js, Express.js, Flask, PyTorch, TensorFlow, Keras, Numba, Pandas, NumPy

Tools: Git, Docker, MongoDB, AWS, Unix/Linux, CUDA, Arduino, Raspberry Pi, Streamlit

Interests: Rugby, Web3, [Movies](#), Manchester United, Embedded Systems, Basketball