Will Krzastek

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Education

University of Notre Dame — Notre Dame, IN
Bachelors of Science in Computer Engineering — *Expected: May 2027 | GPA: 3.67*
Coursework: Data Structures, Discrete Math **(TA)**, Logic Design, Systems Programming, Embedded Systems
Activities: Notre Dame Rugby Team, Notre Dame Rocketry, CSE Teaching Assistant, Quant Club, Zaland Pizza Chef

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

AI Image Captioning | *PyTorch, CUDA, NLTK, LSTM, ResNet, Pandas*
- Deployed a **neural network** using a **ResNet**-based encoder & **LSTM**-based decoder, trained on Flickr8k dataset
- Designed a **PyTorch** data pipeline that optimized tokenization & batching time by **45%**
- Leveraged **NVIDIA CUDA** GPUs for training, reducing computation time by **6x** compared to CPU training
- Minimized the average loss to **2.42** on the final training epoch, enhancing caption accuracy

Twitter Sentiment | *Tweepy, Hugging Face, Pandas, Twitter API*
- Deployed cardiffnlp's Twitter-RoBERTa model & trained on over **100,000** tweets for sentiment analysis
- Improved accuracy by over **3%** each epoch & achieved a final sentiment analysis of **97.8%**
- Streamlined data processing, achieving a **68% speed-up** with advanced cleaning techniques
- Developed a streamlined batch processing method that supports sentiment analysis of **10,000** tweets per minute

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, SQL, HTML/CSS, Java, MATLAB, Bash/Shell
Frameworks: React, Node.js, Express.js, PyTorch, TensorFlow, Keras, Django, Flask, Pandas, NLTK
Tools: Git, Docker, MongoDB, AWS, Unix/Linux, Embedded Systems, Arduino, Software Engineering
Interests: Rugby, Movies, Manchester United, Traveling, Basketball