WALTER W. KRZASTEK

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EDUCATION

University of Notre Dame | Notre Dame, IN   May 2027
Bachelor of Science, Computer Engineering
- Player: Notre Dame Varsity Rugby Team   *GPA: 3.667*
- Relevant Coursework: Discrete Math, Embedded Systems, Fundamentals of Computing, Linear Algebra

Delbarton School | Morristown, NJ   May 2023

EXPERIENCE

University of Notre Dame | Notre Dame, IN   August 2024 –Current
Teaching Assistant: Discrete Mathematics (CSE 20110)
- Led weekly office hours and recitations for **70+ students** where I was responsible for helping students answer questions about course material such as logic fundamentals, axiomatic set theory, combinatorics, number theory, and graph theory
- Graded weekly problem sets and exams, providing feedback in a proof heavy course

Notre Dame Rocketry Team | Notre Dame, IN   February 2024 –Current
Apogee Control Systems Engineer
- Designed mechanical device that creates drag to control rocket's peak apogee
- Developed data filtration and launch algorithms that improved timing accuracy by **75%** for optimal deployment
- Interfaced Raspberry Pi logic circuit with mechanical airbrake system
- Final rocket won **1st place** in NASA's 2024 Student Launch Competition

Student Activities Office | Notre Dame, IN   February 2024 –August 2024
Event Ambassador
- Served as the primary event ambassador for special events and assisted in emergency situations
- Oversaw and ensured the success of **20+** high-profile events at Notre Dame and delivered exceptional customer service

PROJECTS

Choose Your Hooper|Dynamic Website   **GitHub**
Tech Stack: MERN (MongoDB, Express.js, React, Node.js)
- Developed and launched a crowdsourced rankings site for fantasy basketball with **1,000+ active users**
- Developed interactive features including a rankings page, trade calculator, and keep/trade/cut game
- Frontend written in React and hosted on Netlify; backend written in Express.js & Node.js and hosted on Render
- Established a secure MongoDB database hosted on Atlas (AWS)

Twitter Sentiment Analysis| Natural Language Processing Tool   **GitHub**
Tech Stack: Python, Hugging Face, Twitter API
- Deployed cardiffnlp's Twitter-RoBERTa model, achieving **high-accuracy** sentiment analysis
- Processed and analyzed over **100,000 tweets** for sentiment analysis

AI Image Captioning | Neural Network with PyTorch   **GitHub**
Tech Stack: PyTorch, NLTK
- Deployed a neural network model using a ResNet-based encoder and LSTM-based decoder, on the Flickr8 dataset
- Built a custom PyTorch data pipeline to preprocess, tokenize, and batch images and captions for LSTM input
- Optimized the data pipeline, reducing training time by **85%** and minimizing model loss
- Minimized the average loss to **2.42** on the final training epoch, enhancing caption accuracy

SKILLS

Languages:	Python, C/C++, SQL, Java, JavaScript (Express, React, Node), MATLAB, HTML/CSS
Frameworks:	PyTorch, Scikit-learn, NLTK, Hugging Face, TensorFlow, Keras, Pandas, Neural Networks, Flask
Other:	Git, Unix, MongoDB, Microsoft Office, Research, Cross-Team Collaboration, Arduino, Embedded Systems