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)
- Hosted weekly office hours and recitations where I was responsible for helping students answer questions about course material such as logic fundamentals, axiomatic set theory, functions, 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
- Wrote data filtration and launch algorithms to determine the correct ACS deployment time
- 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 –Current
Event Ambassador
- Served as the primary event ambassador for special events and assisted in emergency situations
- Provided courteous customer service to anyone who entered an SAO building
- Monitored and reported the logistics for over 20 high-profile events at Notre Dame

PROJECTS

Choose Your Hooper|Dynamic Website   October 2024 – Present
Tech Stack: MERN (MongoDB, Express.js, React, Node.js)
- Built a crowdsourced rankings site for fantasy basketball with 1,000+ users: Hosted at https://chooseyourhooper.com
- 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 with AWS
- https://github.com/wkraz/dynasty-basketball

Twitter Sentiment Analysis| Natural Language Processing Tool   November 2024 – Present
Tech Stack: Python, Hugging Face, Twitter API
- Trained on the cardiffnlp/twitter-roberta-base-sentiment-latest model
- Features interactive mode for user-input sentiment analysis, and a hashtag-based analysis of tweets from Twitter API.
- https://github.com/wkraz/twitter-sentiment

AI Image Captioning | Neural Network with PyTorch   November 2024 – Present
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
- Enhanced training efficiency with optimized data loading and loss calculation by tuning model parameters.
- https://github.com/wkraz/ai-image-captioning

SKILLS

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