Genesis Argueta

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EDUCATION

University of Notre Dame | Notre Dame, IN   May 2026
Major: Computer Science and Mathematics   *GPA: 3.5/4.0*
Mary E. Galvin Scholar and Fighting Irish Scholar
Summer Engineering in London | London, UK   July 2023 – August 2023

TECHNICAL AND LANGUAGE SKILLS

Programming Languages: Proficient in Python, C, MATLAB, JavaScript, HTML, CSS
Tech: Proficient in SolidWorks, Linux/Unix, Git, Shell Scripting, React, TensorFlow, Flask, PyTorch, SQL, FastAPI

WORK EXPERIENCE

Computer Vision Research Lab | Notre Dame, IN   September 2023 - Present
Undergraduate Research Assistant
- Built a web application using **Flask, JavaScript, HTML**, and **CSS** to capture live recordings, ensuring unique user identification with cookies, and transmitting data to the server.
- Developed **Python** scripts to optimize preprocessing for large datasets using **DLIB's facial recognition models**, organizing images by subject.
- Conducted experiments to compare accuracy scores between different facial angles, utilizing **ArcFace, Img2Pose**, and **PyTorch**, and managed environments with **Anaconda**.
- Created new datasets with identity-disjoint folds for cross-validation, using LFW, CPLFW, CALFW, CFP-FP, and AgeDB-30 datasets.

ASCEND | Notre Dame, IN   January 2024 – July 2024
Coach/Undergraduate Teaching Assistant
- Led bi-weekly Zoom tutorials to guide students through applied math challenges and pre-calculus concepts.
- Mentored and supported 4-5 incoming freshmen in their transition to college life at Notre Dame through regular team and 1-on-1 sessions.
- Assisted with practice problems during weekly 105-minute Calculus II tutorial.

Ethical and Professional Issues Research Lab | Notre Dame, IN   March 2023 – May 2024
Undergraduate Research Assistant
- Conducted human-computer interaction research to design technology-driven solutions that support youth and marginalized communities.
- Interviewed over 20 families and examined the relationship between social media and Latino families.

PROJECTS

MeowNet   July 2024
- Developed a **convolutional neural network** model in **PyTorch** for classifying 12 cat breeds with a 91% accuracy utilizing custom dataset.
- **Deployed** the model in **a web app**, allowing users to upload and test their own images for breed classification.

Credit Card Fraud Detection Model   June 2024
- Designed and implemented five **machine learning models** in **Python** for fraud detection, utilizing data processing techniques such as feature normalization and class imbalance handling, achieving a minimum accuracy of 95%.

LanguageLink | University of Notre Dame   April 2024
- Developed an authentic language learning web with a team at Hesburgh Hackathon.
- Utilized **React**, **JavaScript, HTML, and CSS** for frontend development.
- Leveraged OpenAI **API** to make a customized chatbot for language learning.

Miles: Web Crawler | University of Notre Dame   March 2024
- Extracts links to media files such as JPG, PNG, PDF, and MP3, and downloads them concurrently using a process pool.

LEADERSHIP AND ACTIVITIES

Fighting Irish Scholar Mentor   September 2023 – Present
- Provided guidance in academics, professional development, and social life to empower first-generation and low-income mentees to succeed in college.

CS4Good DePaul Coding Club | Tutor   September 2023 - Present
- Taught **Python** weekly to youth ages 8 to 14 with a history of trauma needs.