

Elden Deguia

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EDUCATION

University of Texas at Dallas

Richardson, TX

Bachelor of Science in Computer Science - 4.0 GPA - Dean's List

Aug 2023 – Dec 2026

- **Relevant Coursework:** Data Structures & Algorithms, Computer Architecture, Operating Systems, Database Systems, Systems Programming in UNIX, Software Engineering, AI, Advanced Algorithm Design & Analysis, Computer Networks

TECHNICAL SKILLS

Languages: Java, Python, C/C++, JavaScript/Typescript, HTML/CSS, SQL, Assembly, Bash Scripting

Libraries/Frameworks: React, Node.js, Express, Flask, TensorFlow, Keras, Pytorch, OpenCV, C++ Threads

Developer Tools: Git, GitHub, LucidChart, Unix CLI, APIs, VS Code, IntelliJ, Jupyter Notebook, Google Colab

EXPERIENCE

Artificial Intelligence Mentee

September 2024 – December 2024

Artificial Intelligence Society at UTD

Richardson, TX

- Collaborated with a team of 5 members along with a project lead to research and develop Medvisor, an AI-powered medical imaging solution
- Contributed to data preparation, model training, and presentation preparation, ensuring alignment with project expectations
- Gained experience working in an agile, Scrum-based team environment, applying problem-solving and communication skills to create a real-world AI application.
- Awarded 1st Place at AIM Night, a society-wide showcase where projects were presented to a panel of judges for evaluation.

PROJECTS

Medvisor | [Visit](#) | [GitHub](#) | *Python, Javascript, React, Flask, Tensorflow, OpenCV*

Sept. 2024 – Dec. 2024

- Contributed to the development of Medvisor, a full-stack, AI-powered application which detects and diagnoses medical conditions from spine MRIs
- Preprocessed over 300 raw 3D MRI scans using **OpenCV**, extracting the most relevant slice from each scan and converting them into normalized PNGs which could be utilized to train a model
- Fine-tuned a pretrained ResNet50 model using **Tensorflow**, utilizing the preprocessed dataset to predict spinal abnormalities such as disc herniation, narrowing, and Pfirrmann grade
- Developed components of the full-stack web application using **Flask** (backend API) and **React** (frontend) to deliver model predictions through an interactive interface.

Dining Philosophers | [Github](#) | *C++, Threads Library*

March 2025

- Implemented the classic Dining Philosophers problem using **Peterson's algorithm** to enforce mutual exclusion without relying on built-in mutexes.
- Modeled each philosopher as an independent thread and coordinated access to shared resources while avoiding deadlock and starvation.
- Designed both **coarse-grain** and **fine-grain** synchronization variants to demonstrate different approaches to concurrency control.

Flight Planner | [Github](#) | *Java*

April 2024

- Designed an **object-oriented** flight planner which utilized graph traversal algorithms to optimize city-to-city travel
- Implemented exhaustive search algorithms to find the three shortest paths based on cost or time preferences
- Processed user-inputted city connections to compute optimal routes