Pigar Biteng

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Education

University of Texas Rio Grande Valley — Edinburg, TX

B.S. Computer Science | Cumulative GPA: 3.96 — *May 2026*

Relevant Coursework:

- Data Structures and Algorithms
- Intro to Deep Learning (Current)
- Software Engineering
- Programming in Unix/Linux Environment

Experience

Undergraduate Research Assistant — Sep. 2024 – Present

University of Texas Rio Grande Valley — *Edinburg, TX*

Project: Optimizing NeuroEvolution of Augmented Topologies (NEAT) based algorithm in Swarm Robotic Foraging

- Currently researching on **Optimizing NeuroEvolution of Augmented Topologies (NEAT)** based algorithm in **Swarm Robotic Foraging** through Penalty-**Reward Systems**
- Coding in **C++** to simulate the robots in **Argos3** simulation and in **Java** and **Python** to train the model and evaluate the accuracy

Reinforcement Learning Research Intern — June 2024 – Aug. 2024

University of Texas Rio Grande Valley — *Edinburg, TX*

Project: Impact of Reward Structure Variations on Agent Behavior in Multi-Agent Reinforcement Learning

- Utilized the **Unity Machine Learning Agents** toolkit in **C#** to make varying reward structures for training agents to play 2v2 soccer to view the effects of more **individualistic rewards**
- **Analyzed** and compared strategies displayed by the trained agents to understand the change in behaviors that were made from varying reward structures
- Found the more **individualistic reward** models generated **riskier behaviors** leading to **higher scoring** games

Mathematics Research Assistant — June 2023 – May 2024

University of Texas Rio Grande Valley — *Edinburg, TX*

Projects: Constrained quantization for a uniform distribution; Conditional quantization for uniform distributions on line segments and regular polygons

- Incorporated findings from **Mathmatica** into **two research papers** on **Constrained Quantization**
- Worked with finding the most optimal set of points given a distribution of one to six points
- Accepted for **publication** in the **Houston Journal of Mathematics**

Involvement

Society of Aerospace and Robotics (SARE) - Organization — Aug. 2024 – Present

University of Texas Rio Grande Valley — *Edinburg, TX*

Project: High Aspect Ratio Vessel, HARV

- Developing the **telemetry** and **UI** for the HARV with a collaborative team utilizing **Jira** for project management
- Utilizing **React** and **Vite** to develop the UI and **node.js** for the backend

Hack Research – Research Themed Hackathon — Nov. 2024 – Nov. 2024

Project: Evaluating the Accuracy of Large Language Models in Extracting Election Data

- Worked in a team of three to produce a **two-page paper** in 24 hours
- Wrote a paper testing the performance of **LLMs** to make **structured** data, a table, from **unstructured** data, news articles

Skills

Languages: C++, C#, Python, Java, HTML/CSS, Mathmatica

Software: VS Code, Arduino IDE, GitHub, Pytorch, Unity Editor

Soft Skills: Time management, Adaptable, Agile methodolgy