Jonathan Kim

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Education

The University of Texas at El Paso (UTEP) **Expected: May 2026**
Bachelor of Science in Computer Science, Minor in Mathematics *GPA: 3.74*
Relevant Coursework: Object Oriented Programming, Automata, Computer Organization, Data Structures & Algorithms

Experience

The Ohio State University AI-EDGE Institute **May 2024 - July 2024**
Generative AI Researcher *Columbus, Ohio*

- Analyzed generative models (**GPT-2**, **VAEs**, **GANs**) to understand their theoretical frameworks and algorithmic implementation, using **PyTorch** for hands-on experimentation and testing.
- Optimized **GPT-2**'s text generation on **1 million tokens** of Shakespearean poems, implementing fine-tuning techniques in **PyTorch**, leading to **4% improvement in accuracy**.
- Developed expertise across **supervised**, **unsupervised**, **semi-supervised**, and **reinforcement learning**, applying **diffusion models** to enhance training outcomes and model robustness.

Projects

DUI Risk Radar (BorderHack) (2nd Place) | *HTML/CSS, JavaScript, React, Firebase* **September 2024**

- Engineered a **React-Firebase** web app for real-time DUI risk visualization, supporting the United Nation's Goal 3.6 to reduce road accident deaths.
- Implemented **linear interpolation** for mock data generation, achieving a **70% improvement in simulation accuracy**.
- Created interactive DUI data visualizations using **Google Maps API**, integrating **Google Cloud Speech-to-Text** for real-time reporting functionality.

Vocowbulary.courses (MLH HackWesTX) | *HTML/CSS, JavaScript, React, Node.js, MongoDB* **September 2024**

- Created a **React-Node.js** web app for non-native speakers, achieving a **20% pronunciation improvement** based on **Google Gemini** feedback, and supporting real-time testing for 40+ users.
- Implemented a custom scheduling algorithm using **Node.js** and **MongoDB** to dynamically fetch and prioritize words based on user feedback, **Google Gemini** insights, and performance metrics.

SnapMarket | *HTML/CSS, JavaScript, React, Axios, Django, AI, ML* **June 2024 – July 2024**

- Developed a **React-Django** web app enabling video screenshot-based product search, displaying product details.
- Integrated **Google Cloud Vision API** and **Serp API**, **improving product search accuracy by 15%** and enabling precise image-based recognition.
- Streamlined API data retrieval by implementing efficient data handling, displaying content dynamically, scroll animations, content hiding, hover effects, and responsive design for various screen sizes.

Poké Generator | *Pytorch, AI, ML, Python, Image Generation* **May 2024 - July 2024**

- Led a team of 3 to refine **Stable Diffusion 2**, achieving a **40% improvement** in generating realistic Pokémon-like images from text.
- Processed five datasets (**300,000 data points**) from Kaggle, GitHub, Hugging Face, and PokéAPI, leveraging **Python** and **Pandas** for data preparation and management.
- Built a **data pipeline** and applied **LoRA fine-tuning**, significantly improving image quality in the generation process.

Technical Skills

Programming Languages: Python, Java, JavaScript, SQL
Technologies: HTML/CSS, Git, React, Django, Flask, Firebase, Docker, MongoDB, Node.js, Axios, PyTorch, Pandas

Leadership / Extracurricular

CIA Analytical Mentorship Program **September 2024 - Present**
Analytic Mentee *UTEP*

- Enhanced analytic and briefing skills through CIA mentorship, researching AI applications in the Chinese military.

Free and Open-Source Club **January 2024 – Present**
Secretary *UTEP*

- Improved club operations and outreach, **increasing attendance by 20%** and **mentoring 15+ students** through **Flask** workshops and open-source tools.