

Robert McCrary

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EDUCATION

Kennesaw State University

Bachelor of Science in Computer Science

Marietta, GA

August 2024 – May 2028

Course Work

CSE 1321(Java), CSE 1322(Java), Discrete Mathematics

EXPERIENCE

Undergraduate Research Assistant

Kennesaw State University

December 2024 - Present

Marietta, GA

- Conducting research to improve the Spotter model, a transformer-based AI model designed for classifying sign language videos.
- Implementing a custom positional encoding layer to enhance its ability to process sequential data.
- Performing in-depth research and analysis of positional encoding techniques to optimize transformer performance.
- Leveraging Python and deep learning frameworks to develop and debug the custom layer.

Co-Founder and Lead Developer

PseudoAI (pseudoai.dev)

November 2024 - Present

Remote

- Developed a full-stack application using Next.js, MongoDB, and user authentication to streamline user onboarding and personalized content delivery.
- Designed and implemented AI-driven features, such as dynamic problem-solving hints and pseudocode generation, to enhance user engagement
- Deployed scalable backend architecture, including efficient data models and APIs, ensuring seamless interaction between AI modules and the problem database.

Full Stack Team Lead

AI Club at KSU (ksuaiclub.com)

September 2024 - Present

Marietta, GA

- Leading the development of the Ask Scrappy Chat website, an AI-powered platform leveraging a Retrieval-Augmented Generation (RAG) model, specifically trained on KSU-related data such as course catalogs and professor ratings.
- Building the frontend using Next.js to deliver a dynamic, responsive, and user-friendly interface tailored for KSU students.
- Designing user onboarding workflows, streamlining account creation and personalized access to academic resources through the platform.

PROJECTS

Compiler From Scratch | *Go*

September 2024

- * Converted raw source code into tokens using a lexer and parsed tokens into an Abstract Syntax Tree (AST).
- * Validated the AST for meaningful constructs, then translated into an intermediate representation (IR) to facilitate optimization.
- * Optimized the IR for efficiency, generating machine code from the optimized representation, followed by linking and assembling to produce the final executable.

Neural Network from Scratch | *Python, Numpy*

August 2024

- * Developed a neural network from scratch using Python and NumPy.
- * Created an FCLayer paired with a robust Activation Layer that employed forward and backward propagation techniques; this architecture increased overall accuracy metrics of the neural network by achieving over 95% on validation sets.

TECHNICAL SKILLS

Languages: Java, Python, C#, C++, SQL, JavaScript, TypeScript, Go, Lua

Frameworks: React, Node.js, Express, JavaFX, Swing, OpenGL

Developer Tools: Neovim, Git, Postman, GitHub, GitLab, Unity, MongoDB

Libraries: pandas, NumPy, Matplotlib, Torch