

# Jerrold Walker Jr.

(469) 422-7710 • jerrold.walker.jr@gmail.com • Baton Rouge, LA (Open to Relocation)  
[linkedin.com/in/jerroldwalkerjr/](https://linkedin.com/in/jerroldwalkerjr/) • <https://github.com/jerroldwalkerjr>

## EDUCATION

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### Louisiana State University (LSU), Baton Rouge, LA

December 2025

B.S., Computer Science (Software Engineering) - Minor in Digital Media Arts & Engineering in Technology - GPA 3.0

**Related Coursework:** CSC 3102: Data Structures & Algorithms (**Java**), CSC 3380: Object-Oriented Programming & Design (**Python & Java**), CSC 4402: Database Management Systems (**SQL**), CSC 4444: Artificial Intelligence (**Python**)

### LSU Artificial Intelligence & Machine Learning Bootcamp

February 2026

#### Powered by Fullstack Academy

Immersive AI & Machine Learning program which utilized active learning to gain proficiency in data technologies and tools including **Python**, **PyTorch**, **NumPy**, **Keras**, and **TensorFlow**, and understanding of **machine learning**, **deep learning**, and **data science processes**.

## TECHNICAL PROJECTS

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### [github.com/jerroldwalkerjr](https://github.com/jerroldwalkerjr)

#### MNIST Image Classification | Python, NumPy, PyTorch, ML | Handwritten Digit Recognition

- Implemented classical Machine Learning models (K-Nearest Neighbors, Naive Bayes, Linear Classifier) from scratch in **NumPy**, achieving validation accuracy > 75%.
- Developed deep learning models (**Linear**, **MLP**, **CNN**) in **PyTorch**, reaching CNN loops with GPU acceleration.
- Preprocessed MNIST images, built custom data loaders, and implemented training loops with GPU acceleration.
- Visualized learned weights and model performance using **Matplotlib**, providing interpretable insights into model behavior.

## EXPERIENCE

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### Undergraduate AI Research Software Engineer

August 2025 – Present

LSU College of Engineering

- Designed and implemented the full architecture (frontend, backend, and AI pipeline) for *ExpertAgent*, a personalized learning platform that delivers real-time adaptive instruction using LLMs.
- Built a production-ready backend using **FastAPI**, including modular service layers, secure REST endpoints, session management, and curriculum-driven data models.
- Developed an AI reasoning pipeline integrating **GPT-4o-mini**, enabling context-aware content generation, dynamic lesson planning, and continuous updates to the knowledge model.
- Engineered a student-modeling system that quantifies learner progress and drives the agent's planning decisions, improving personalization and pacing.

### Vice President

August 2024 – November 2025

Theta Kappa Chapter of Omega Psi Phi Fraternity, Inc., Baton Rouge, LA

- Collaborated with the executive board to oversee the operations of the chapter, ensuring adherence to organizational goals and university policies.
- Supported the President in strategic decision-making and acted as a liaison between the executive board and members to address concerns and maintain strong communication.

## TECHNICAL SKILLS

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**Tools:** Python, Java, SQL, C++, VS Code, Github, TensorFlow, Keras, ScikitLearn, Matplotlib, NLTK, OpenCV, NumPy, Pandas, Sqlite, Seaborn, Bokeh, Plotly, PyTorch, Huggingface

**Skills:** Generative AI, Prompt Engineering, Large Language Models, Model Training and Optimization, Ensemble Methods, Deep Learning, Natural Language Processing, Machine Learning Algorithms, Convolutional Neural Networks

## ACTIVITIES

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Omega Psi Phi Fraternity, Inc., National Society of Black Engineers, Order of Omega, NAACP, NSLS