

EDUCATION

University of Central Florida - Expected Graduation: 2027

B.S. Computer Science | B.S. Statistics | Minor: Actuarial Sciences

Relevant Coursework

Calculus With Analytical Geometry II/III • Discrete Structures • Object Orientated Programming • Statistical Methods I/II
Computer Logic and Organization • Computer Science I/II • Algo for Machine Learning • Statistical Theory I

SKILLS

Programming Languages: Python3 • C • SQL • Java • HTML/CSS • JavaScript

Frameworks & Tools: DJANGO Framework • React Native • REST APIs • AWS EC2 • GCP Compute Engine • Flask

Libraries: Keras/TensorFlow • Matplotlib • Pandas Library • Neural Networks • Word2Vec • ReportLabs • OpenCV

EXPERIENCE

Undergraduate Research Assistant – University of Central Florida | November 2024 – Present

- Worked with the project group “Developing Algorithms for Intelligent Autonomous Systems”.
- Collaborated with PhD students and faculty principal investigator to advance project objectives on Multi-Agent Reinforcement Learning.
- Assisted in coding and simulation efforts, ensuring accurate modeling of intelligent autonomous system behaviors using Python and MATLAB.

PROJECTS

Smart home assistant — Jul - Aug 2024

- Developed a Smart Home Assistant using Raspberry Pi, Python, and TensorFlow.
- Implemented facial recognition for secure door unlocking via a servo motor. Automated lighting control using a radio frequency transceiver. Integrated music playback for hands-free entertainment. Set up VPN server functionality to ensure secure and private internet access.
- Utilized TensorFlow, OpenCV, ArduCam, Flask, and MQTT to combine machine learning, hardware integration, and network security.

Compiler for Pseudocode in C — July 2024

- Designed and implemented a complete compiler in C, encompassing lexer, parser, semantic analyzer, and code generator for a bespoke pseudo-code language.
- Ensured modular architecture to allow easy scalability and maintenance, supporting future expansion of language features.
- Integrated comprehensive error handling to provide clear and informative feedback, improving user experience and debugging efficiency.

Trading strategy Algorithm — Jul 2024

- Developed a Python program to analyze stock data using technical indicators like SMAs, EMAs, MACD, RSI, and Bollinger Bands. Pulled stock data via the yfinance library, applied feature engineering, and implemented clustering using Gaussian Mixture Models (GMM) to identify market patterns.
- Generated buy/sell signals and visualized market trends with Matplotlib by plotting technical indicators and entry signals.
- Utilized Random Forest Classifier and Gaussian Mixture models to predict stock movements, with data preprocessing using StandardScaler and feature selection from multiple technical indicators.

HACKATHON – ANATOMY ANT – Oct 2024

- Developed the full backend for a mobile app designed to aid Anatomy students. The app incorporated chapter summaries fed through an OpenAI API, chapter quizzes created by ChatGPT and a finetuned Anatomy OpenAI model.
- The Flask backend, hosted on a Google E2 instance, returns JSON data with anatomy questions, including fields for chapter, question ID, text, options, correct answer, and user's choice.
- All anatomy-related information was generated using a finetuned OpenAI 4.0 API and fed into the frontend through a Flask API

Embeddings Data Pipeline – Oct 2024

- Developed a FastAPI application for generating and storing text embeddings using OpenAI's Embedding API. Implemented RESTful endpoints for creating and retrieving embeddings. Leveraged Pydantic for data validation and FastAPI for building the API.
- Utilized SQLAlchemy with PostgreSQL for asynchronous database operations. Employed Alembic for database schema migrations.
- Ensured efficient data handling and robust performance through proper error handling and optimized database interactions.

CERTIFICATIONS

Learn Python 3 (Code Academy) • Learn SQL (Code Academy) • Learn HTML (Code Academy) • Learn CSS (Code Academy)