

# Georgi Varbanov

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## TECHNICAL EXPERIENCE

### Machine Learning Engineer Intern

May 2025 – August 2025

*TD Synnex*

*Clearwater, FL*

- Architected and developed a multi-agent framework using LangChain and Python to automate complex document analysis, orchestrating parallel tasks between specialized LLM agents (e.g., GPT-4, Llama 3) to improve processing efficiency.
- Designed and implemented a custom conversational memory module with a Redis caching layer, reducing API calls and decreasing system latency by over 30%.
- Engineered an end-to-end Retrieval-Augmented Generation (RAG) pipeline, handling data ingestion, preprocessing, embedding generation with Hugging Face transformers, and vector storage in Pinecone.

## EDUCATION

### University of South Florida

Tampa, FL

*Master of Science in Computer Science*

*Aug. 2025 – May 2027 (Expected)*

### University of South Florida

Tampa, FL

*Bachelor of Arts in Philosophy*

*Aug. 2019 – Dec. 2022*

## TECHNICAL PROJECTS

### AI-Powered Critical Reasoning Extension | *Python, Hugging Face, FastAPI, JavaScript, HTML, AWS*

- Engineered a browser extension for real-time critical analysis of text, identifying logical fallacies and potential cognitive biases in any user-selected content on the web.
- Fine-tuned a BERT-based classifier from the Hugging Face ecosystem for fallacy detection and served the model via a containerized FastAPI backend API deployed to the cloud.
- Developed the client-side extension in JavaScript to capture text, manage asynchronous API communication, and dynamically render analysis results for the user.

### Job Recommendation System | *Python, AI/ML, SHAP, Docker*

- Designed and developed a machine learning system that analyzes resume and job description content to generate personalized job recommendations.
- Implemented a machine learning pipeline utilizing a BERT model for intelligent content analysis and semantic matching.
- Leveraged SHAP (Shapley Additive exPlanations) to create a model explainability feature, visualizing which specific skills and keywords on a resume contributed most to a job match.

### Credit Card Statement Analyzer | *Python, React, PostgreSQL*

- Developed a full-stack application from concept to completion, featuring a Python backend to extract and categorize data from PDF statements.
- Engineered the backend API service using Flask and designed a PostgreSQL database schema optimized for financial transaction querying and analysis.
- Built an interactive and responsive dashboard with React to enable users to visualize spending patterns and historical trends.

## OTHER PROFESSIONAL EXPERIENCE

### Radiologic Technologist (PRN)

December 2018 – Present

*HCA Healthcare, Largo, FL & Orlando Health, St. Petersburg, FL*

- Operated digital imaging systems and maintained EHRs for 30+ patients daily across facilities, ensuring data accuracy.
- Applied problem-solving to optimize image quality and troubleshoot tech issues, maintaining safety and quality standards.
- Collaborated with diverse healthcare teams, efficiently processing time-sensitive diagnostic information.

## TECHNICAL SKILLS

**Languages:** Python, Go, SQL, C, JavaScript, C++

**Frameworks & Libraries:** FastAPI, Flask, React, Langchain, PyTorch, Scikit-learn, Pandas, Numpy, HuggingFace

**Databases:** PostgreSQL, Pinecone, Redis

**Developer Tools & Cloud:** Docker, Git, Linux, AWS