Shanav Bagga

(224)-227-9296 | Elgin, IL | svbagga2@illinois.edu | https://www.shanav-bagga.com/
https://github.com/Shanav12 | https://linkedin.com/in/shanav-bagga/

EDUCATION

University of Illinois at Urbana-Champaign **Champaign, IL**
Bachelor's of Science in Computer Science and Statistics **Expected Graduation**: May 2026

- **GPA**: 3.78/4.00
- **Relevant Courses**: Data Science Discovery, Discrete Structures, Data Structures, Computer Architecture, System Programming, Linear Algebra, Algorithms, Databases, Machine Learning

PROFESSIONAL EXPERIENCE

Department of Computer Science **Champaign, IL**
Introduction to Computer Science II Course Assistant *August 2023 - December 2023*

- Held weekly office hours to assist students in understanding key C++ concepts such as compilation, references, pointers, stacks, queues, trees, graph theory, polymorphism, file streams, and dynamic memory
- Guided students through writing efficient test cases that would aid them in thoroughly debugging their code
- Ran weekly lab sections which reviewed concepts covered and prepared students for their projects

Introduction to Computer Science I Course Assistant *January 2023 - May 2023*

- Spent several hours on a weekly basis teaching introductory Java programming concepts to students
- Interacted with students through course help site meetings and forum discussions
- Assisted students in debugging an Android application displaying the course staff's favorite locations

AI Camp **Remote**
Software Engineer Intern *May 2023 - August 2023*

- Implemented a Chatbot in Python hosted through Streamlit that allows users to select a query engine, upload multiple files, and query them
- Utilized a variety of combinations of Llama Index, Langchain, Pandas, and Pinecone along with OpenAI's API to create multiple different query engines that each suite a unique task
- Created an automated test suite on the SQUAD dataset by iterating through each node, prompting OpenAI's API to form a question, and stored the question, response, context used, and response score
- Leveraged Llama Index's Response Evaluator to determine whether the response was strictly using the context given and achieved an accuracy rate of 89.5%

LEADERSHIP EXPERIENCE

Project: Code **Champaign, IL**
Technical Lead *August 2023 - December 2023*

- Led a team of 10 students through the development of an interactive Python chatbot where students are able to upload PDFs of course textbooks and query them to assist them in studying
- Incorporated weekly meetings to provide students with knowledge of OpenAI's API, Vector Databases, Github, Langchain, and Llama-Index as well as office hours to provide additional assistance

PROJECTS

Customer ETL Pipeline | *Python, MySQL, Spark, Google BigQuery* ***May 2024***

- Implemented an ETL Pipeline that extracted 250,000 records of ecommerce customer data from MySQL
- Transformed the data in PySpark through filtering out rows containing null values, grouped all unique customers, engineered a purchases feature, and loaded it to Google BigQuery
- Employed a logistic regression model to predict customer retainment and achieved an accuracy rate of 70%

TCP Chat App | *C++* ***January 2024***

- Utilized Boost libraries to build a chat application that allows multiple clients to connect to a server through TCP networking protocols
- Created a separate thread to run the clients to ensure that connections are managed in a smooth fashion

GPT Lyric Generator | *Python, HTML, CSS, Flask* ***July 2023***

- Utilized GPT-2 embeddings and the GPT-Neo model from Hugging Face to implement a full-stack website built through HTML, CSS, and Flask that outputs lyrics in the style of Taylor Swift
- Deployed the trained model with a loss of 0.138 to Hugging Face and fine-tuned the output of API calls by adjusting hyperparameters such as max tokens and repetition penalty

SKILLS & AWARDS

Languages: C++, Python, C, Java, Rust, SQL, R, HTML, Javascript, CSS
Tools: Git, AWS, Docker, Linux, Bash, Google Cloud Platform, MySQL, Spark
Frameworks: Flask, React, Tensorflow, Scitkit-Learn