

Ratnam Shah

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EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science
Bachelor of Science in Computer Science *Expected May 2026*

Relevant Coursework: Human Computer Interaction, Automata Theory and Formal Language, Distributed Systems, Programming Languages, Computer Vision, High Performance Computing.

Nirma University, Institute of Technology *Bachelor of Science in Computer Science* *Oct 2022 – May 2024*

Relevant Coursework: Data Structures and Algorithms, Object-Oriented Programming, Operating Systems, Design and Analysis of Algorithms, Computer Programming, Principles of Software Development, Digital Design, Computer Organization and Assembly Language Programming.

TECHNICAL SKILLS

Languages: C++, C, Java, Python, Javascript

Software and OS: XCode, Android Studio, Visual Studio Code, Pycharm, Clion, IntelliJ, WebStorm, Windows, MacOS, Linux.

Additional: Git, VCS, HTML, CSS, WebSocket, Data Visualization, Predictive Analysis, Exploratory Data Analysis, Flask, Django, Pytorch, Tensorflow, ScikitLearn, Matplotlib, NumPy, OpenCV, Apache Airflow, Keras, MATLAB

Certifications: Generative AI at SAP, Software Engineer Virtual Experience at JPMC, Agile Methodology Virtual Experience at Cognizant, Advanced Software Engineering Job Simulation at Walmart.

PROFESSIONAL EXPERIENCE

Adani Wilmar, Software Intern | Ahmedabad, IND

Jan 2024 – Feb 2024

Tech Stack: Python, Apache-Airflow, SQL, HTML, Google Cloud Platform

- Automated daily email distribution using Python and Apache Airflow, reducing manual effort by 20 hours weekly.
- Developed a Python script to format SQL query results into HTML tables, improving stakeholder readability.
- Streamlined workflows on Google Cloud Platform, ensuring 100% on time delivery of data insights to 20+ stakeholders.

PROJECT EXPERIENCE

Quantized LLM Comparison Study | Research Project with PhD Fellow

Oct 2024 - Present

- Collaborating with a Gold Medalist, Prime Minister's Fellow PhD researcher to benchmark performance metrics between quantized and non-quantized LLMs.
- Developed a FastAPI backend integrating multiple quantized models with MLX for efficient inference.
- Implementing evaluation metrics to quantify model outputs, response times, quality assessments and cost-performance between model variants.

Handwriting Recognition Android Application *Python, Java* | Group Project

Aug 2024 – Dec 2024

- Designed and trained a CNN architecture, then transitioned to GRU-LSTM neural network for improved sequence recognition.

- Processed and utilized the MJSynth dataset consisting over 9 million synthetic word images to train the model.

- Integrated the trained model into an Android app, enabling real-time handwriting application with 90% accuracy.

Stock Predictor *Python (Flask)* | Independent Project

June 2024 – Aug 2024

- Developed a stock prediction tool using an LSTM-based time series forecast to predict prices based on historical data.
- Modified the original LSTM model to an ARIMA-SARIMA hybrid model decreasing latency by more than 10 ms.
- Integrated advanced security features, including email verification and 2-factor authentication (2FA), to ensure secure user access.

Voice Assistant *Python(gTTS)* | Independent Project

March 2024 – June 2024

- Designed and developed a voice assistant utilizing the SpeechRecognition library to convert spoken commands to text with high accuracy.
- Implemented functionalities to open desktop applications, enabling seamless interaction with the user's operating system.
- Optimized the assistant to respond in less than 1 second, with the Wikipedia API supporting up to 50 requests per user, ensuring efficient and reliable performance.

EXTRACURRICULAR

YouTube Channel/Podcast:

- Created and managed a YouTube channel and podcast focused on technology and cars, amassing over 10,000+ views/listen across platforms.
- Produced engaging video and audio content, sharing insights, opinions and latest news with a growing audience.
- Built a personal brand (@JeopardizeP on YouTube, "Jeopardize" on Spotify and Apple Podcast) by consistently delivering high-quality, informative and entertaining content.