Sankalp Naik

sankalp-naik-ml | sgnaik@andrew.cmu.edu | * +1 (412) 608-7192 | Sankalp22863

Education

Carnegie Mellon University — *Aug 2025 - Present*
MS in Artificial Intelligence Engineering Electrical and Computers — *Pittsburgh, USA*

Visvesvaraya National Institute of Technology — *Jul 2018 - Jun 2022*
Bachelor of Technology in Electronics and Communication Engineering — *Nagpur, India*

GPA: 9.78/10.0 (Rank 1/140, Visvesvaraya Medal of Excellence)

Relevant Coursework

• Machine Learning • Python Programming • Microprocessors and Interfacing • Operating systems
• Digital Image Processing • Linear Algebra & Applications • Numerical Methods & Probability Theory

Publications

ARMPC – ARIMA Based Model Predictive Control for Adaptive Bitrate in Streaming — *Accepted Date : 31/03/2022*
S. Naik, O. Khan, A. Katre, and A. Keskar

- Proposed an ARIMA-based (Auto Regressive Integrated Moving Average) technique, to substitute the Harmonic Mean predictive algorithm used in the original Model Predictive Control scheme to determine the best possible bitrate for the given network conditions.
- Mathematically demonstrated that the proposed model provides us with improvements in the prediction of optimal bitrate for given bandwidth and buffer capacity within computational constraints of practical implementation.
- Analyzed and compared various methods, including deep learning techniques, to improve adaptive bitrate schemes for improved Quality of Experience (QoE) in video streaming. *"ARMPC - ARIMA based prediction model for Adaptive Bitrate Scheme in Streaming "* in the *2022 IEEE International Conference on Paradigm Shifts in Communication, Embedded Systems, Machine Learning and Signal Processing (PCEMS)*. DOI: 10.1109/PCEMS55161.2022.9807874 *.
- Awarded the **'Best Research Paper'** at the PCEMS Conference.

Youtube Universe of Comments: A Machine Learning approach for systematic classification of YouTube Comments on custom prepared dataset — *Accepted Date : 30/05/2023*
S. Naik, A. Katre

- Prepared a Custom dataset of Hinglish YouTube Comments by web scraping & designing a comprehensive annotation scheme, considering various dimensions such as sentiment, topic, toxicity, and engagement.
- Leveraged robust ML classification models and NLP techniques to accurately capture the sentiment of Hinglish comments and identify abusive comments.
- Introduced the concept of Gravity of comments which will act as a reward mechanism for comments based on the computed sentiment and help YouTube reorder the display order of comments.
- Co-authored and published a paper titled *"YouTube Universe of Comments: A Machine Learning Approach for the systematic classification of YouTube Comments on a custom prepared dataset"* at the *2023 IEEE World Conference on Communication & Computing (WCONF)*. DOI: 10.1109/WCONF58270.2023.10235049 *.

Projects

Portfolio Optimization using Predictive Algorithms *Optimal_Portfolio* *

- Developed an online GUI tool which takes in real-time stock data and predicts its trend. Further optimizes the portfolio by giving the percentage of stocks to be taken for high risk high profit and optimal risk moderate profit scenarios
- Tools Used: Python, Streamlit, Shell

Music Information Retrieval.

- Used signal processing and Linear Algebra techniques to separate vocals from background noise in classical Indian music.
- Tools used: Python, Linear Algebra.

Experience

Associate Applications Developer *India*
Oracle Financial Services Software Limited(OFSS) *July 2022 – June 2025*
Awarded Oracle Pacesetter Award 2025 (Given to top 1% contributors)

- Designed and implemented a **distributed database architecture** from scratch, enabling seamless data sharing in a **non-shard-aware environment**; improved system **scalability, fault tolerance, and robustness**
- Redesigned and modernized the legacy configuration system by **building a configuration server microservice with real-time configurations loading, server health checks, and automated retries**; accelerated **configurations retrieval by 40%**.
- **Optimized high-throughput APIs** to handle large-scale data payloads, reducing latency to consistently **rank within the top 90th percentile** of SLA targets, directly improving customer experience and system reliability.
- Developed an advanced **queue filtering mechanism framework** that eliminated duplicate message processing across multi-clustered environments, reducing overhead and ensuring **exact delivery guarantees**.

Technologies & Tools: - Java, Hibernate,Kafka, JMS, Oracle SQL, Microservices, REST Apis.
DevOps & Platforms: Docker, Kubernetes, Jenkins, Weblogic, Tomcat, JIRA, SVN, Linux.

Skills

Programming Languages : Java, Python, C++, C, SQL, Assembly Programming, MATLAB
Microprocessors and Microcontrollers: Intel 8085 & 8086, Intel 8051, Intel Pentium
Libraries & Frameworks : PyTorch, NumPy, Pandas, Matplotlib, TensorFlow, Spring Boot, Scikit-learn, SciPy
Statistical Analysis and Machine Learning : Clustering, Regression, Classification, Natural Language Processing

Extracurricular Activities

Work Awards

- Recipient of the **Pacesetter Award** for driving innovative software innovations and contributing to critical projects at Oracle Financial Software Services.
- Recipient of **"The Extra Mile Award"** for contributions to the development of Separate Database in the product.

Academic Awards

- Dr. V.M. Docras Felicitation Committee Prize for Highest CGPA in Third Year B.Tech Electronics and Communication Engineering.
- Akhilesh Godam Memorial Prize.

Leadership Roles

- Manager, Entrepreneurship Cell, VNIT.
- Member, VNIT Training and Placement Cell.