

OMKAR OAK

✉ omkarsoak@gmail.com  LinkedIn  Github  Google Scholar  omkarsoak.github.io

EDUCATION

College of Engineering Pune (COEP)

Pune, India

Bachelor of Technology in Computer Engineering, **GPA: 9.52/10**

Aug 2021 - May 2025

• **Relevant Coursework:** Operating Systems, Computer Networks, Database Systems, Data Structures, Artificial Intelligence, Data Science, Microprocessors, Computer Organization, Compilers, Analysis of Algorithms, Cloud Computing

EXPERIENCE

Wells Fargo

Chennai, India

Software Engineering Intern

May 2024 - Jul 2024

- Designed and implemented Graph algorithms using CypherQL in a Customer Network Analysis project.
- Migrated data from Hogan DB to Neo4j, a cloud-based Graph Database, improving data retrieval efficiency by 30%.
- Explored Graph ML algorithms like kernel methods and walk-based approaches such as Node2Vec to extract topological features and analyze relationships between customer portfolios.

PROJECTS

LEVIR-CD based Building Change Detection | *Computer Vision* – [Github](#)

- Developed a building change detection model using the LEVIR-CD dataset, leveraging Spatial-Temporal Attention Network (STANet) to enhance feature extraction from satellite imagery, achieving a recall of 0.94.
- Utilized STANet to improve precision in detecting and classifying building changes over time, with a AUC of 90.72%, effectively identifying structural modifications in images spanning 5 years.

Financial Report Summarizer | *Data Mining, NLP* – [Github](#)

- Developed an extractive summarizer for SEC 10K filings, boosting document processing speed by 50% and achieving an 85% summarization accuracy using NLP techniques.
- Built a complete end-to-end ML pipeline, including web scraping and information retrieval, to streamline financial report summarization.

Time Series Analysis of Forex Rates | *Machine Learning* – [Github](#)

- Time series analysis and forecasting using ARIMA and LSTM models for Forex rates of 37 currencies (USD,EUR,GBP) to INR for the period 2006 - 2023.
- Also covers the TSA specific data preprocessing components such as finding trends and seasonality, converting to stationary, and finding the autocorrelation function (ACF) to make it suitable for modeling.

Priority Scheduling in xv6 | *Operating Systems* – [Github](#)

- As part of the OS Lab, implemented priority scheduling in xv6. Utilized C and assembly language for kernel modifications, adhering to best practices in low-level programming and system architecture.
- Modified the kernel to include priority queues, allowing for dynamic adjustment of process priorities based on predefined criteria.

SKILLS

Programming Languages: C, C++, Java, Python, R, Julia, Javascript, SQL, Bash

Technologies: Git, Docker, Kubernetes, AWS, Linux, Hadoop

Libraries: TensorFlow, Keras, NumPy, Pandas, Scikit-learn, PyTorch, OpenCV

PUBLICATIONS

Omkar Oak, Rukmini Nazre, et al. "A Novel Transfer Learning based CNN Model for Wildfire Susceptibility Prediction." *International Conference for Emerging Technology (INCET)*. IEEE, 2024. – [Paper](#)

Omkar Oak, Suraj Sawant, et al. "A Comparative Analysis of CNN-based Deep Learning Models for Landslide Detection." *Asian Conference on Intelligent Technologies (ACOIT)*. IEEE, 2024. – [Paper](#)

Omkar Oak, Yogita Mahatekar, et al. "A Novel Multivariate Bi-LSTM model for Short-Term Equity Price Forecasting" *5th Global Conference for Advancement in Technology (GCAT)*. IEEE, 2024. – [Paper](#)

ACHIEVEMENTS

Achieved 2nd Rank in the Department of Computer Engineering in COEP out of 178 students

Won the Best Technical Implementation Award for our BTech Project at the UG Project Competition

Passed the **Japanese Language Proficiency Test (JLPT) N4** exam conducted by the Embassy of Japan

Secured Rank 70 out of 4 Lakh students scoring 99.93 percentile in MHT-CET 2021 (Engineering Entrance Exam)