Rohan Padhye

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EDUCATION

Master of Science - Computer Science   *August 2023 - Sept 2024*
Western University, London, ON   **GPA 4.0**
Coursework: Data Visualization, Foundation of Algorithms, Software Verification Validation and Testing, Data Processing at Scale, Statistical Learning, Artificial Intelligence, Data Mining.

Bachelor of Engineering - Information Technology   *August 2019 - May 2023*
Vivekanand Education Society's Institute of Technology, Mumbai, India   **GPA 3.8**
Coursework: Cloud Computing, Software Engineering, Big Data Analytics, Artificial Intelligence, Object Oriented Programming.

TECHNICAL SKILLS

Programming Languages: Java, Python, JavaScript, TypeScript, C, C++, MATLAB, Bash.
Development and Web: React.js, Angular, Node.js, Next.js, HTML, CSS, Bootstrap, D3.js, Flask, Streamlit.
Databases and Cloud: PostgreSQL, MySQL, MongoDB, DynamoDB, Firebase Firestore, Neo4j, AWS, Azure, GCP
Tools and Libraries: Git, Jenkins, Docker, Kubernetes, Terraform, Spark, Kafka, Zookeeper, CI/CD, REST APIs

EXPERIENCES

Technical Research Aide - *Western University, London, Ontario*   *March 2024 - May 2025*
- Engineered scalable end-to-end data workflows for over **100,000+** financial data points in **Python** and **Mathematica**, supporting quantitative models for academic publications and policy briefings.
- Developed **statistical models** and automated analysis routines to detect market cycles and long-term trends, through **regression, time-series decomposition**, and **hypothesis testing** to extract actionable insights.
- Designed interactive visualizations in **Matplotlib** and **Seaborn** to present **70+ years** of market data, powering research used in academic papers and policy presentations for **NITI Aayog**.

Software Developer Intern - *Zoho Corporation, Mumbai, India*   *April 2023 - July 2023*
- Built a task automation dashboard using **Python**, **Flask**, and **SQLite** to streamline internal workflows by enabling real-time job tracking, filtering, and status updates for team operations.
- Automated repetitive data entry and reporting tasks, reducing manual effort by **70%** and improving task completion visibility across teams with latency under **1.5 seconds**.
- Implemented features for progress analytics, daily summaries, and priority tagging, improving team efficiency by **25%**. Wrote clean, modular code to ensure maintainability and future extensibility.

PROJECTS

Data Processing Pipeline for Graph-Based Analytics   View on GitHub
(Neo4j, GDS Plugin, Docker, Kubernetes, Mini Kube, Kafka, Zookeeper, Python, Helm)
- Designed and deployed a scalable distributed **data pipeline** using **Kubernetes**, **Kafka**, and **Neo4j**, processing over **1 million NYC Yellow Cab Trip records** in real-time, enabling advanced graph analytics (PageRank, BFS) and reducing data processing latency by **40%** through **Docker** containerization and **Helm**-**based** deployments.

AutoPlate: Real-Time Vehicle Number Plate Recognition   View on GitHub
(YOLOv4, TensorFlow, Keras, OpenCV, Scikit-image, SciPy, Streamlit, Easy OCR, MySQL)
- Developed a **YOLOv4**-based detection and recognition system trained on **15,000+** annotated vehicle images; achieved **95%** accuracy in identifying license plates across varied lighting and angles.
- Deployed a full-stack web application using **Streamlit** and **MySQL**, allowing users to upload images, view detection results in real-time, and store recognition data for later analysis.

Earth Hour: Eco-Friendly Marketplace   View on GitHub
(HTML, CSS, Bootstrap, JavaScript, ReactJS, NodeJS, Firebase)
- Led the development of a full-stack marketplace promoting eco-friendly and sustainable products, enhancing platform scalability and improving user engagement by **35%** through performance-optimized **ReactJS** components and efficient backend architecture.
- Implemented key features including **real-time data** storage **(Firebase Firestore)**, secure **payment gateway integration** (Razor Pay), and robust user **authentication** (Firebase Authentication), with **Git** and **Agile** methodologies for effective collaboration.

PUBLICATIONS

Smart Door Keeper   View on IEEE
- **Rohan Padhye**, C. Thakur, A. Thakur, P. Vartak and V. Pujari, "Smart Door Keeper," 2023 5th International Conference on Energy, Power and Environment: Towards Flexible Green Energy Technologies (ICEPE), Shillong, India, 2023