Kshitij Pawar

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Education

University of Southern California
Master of Science in Computer Science — May 2025

University of Mumbai
Bachelor of Engineering in Computer Engineering — Jun 2021

Experience

Research Assistant — Jan 2024 – Present
USC Information Sciences Institute

- Created a mixed-method code pipeline on high-performance computing to quantify changes in public opinion across ideological groups before and after significant sociopolitical events
- Performed two-pronged analysis approach, combining traditional stance detection algorithms with Llama3 fine-tuning techniques, to capture nuanced shifts in community opinions
- Generated visualization charts and statistical tests to prove change in attitude across social media discourse

Machine Learning Engineer — Jun 2021 – Jul 2023
Tata Consultancy Services Research & Innovation Labs

- Awarded On the Spot Award for streamlining object-detection pipeline with 93% accuracy for region-of-interest extraction from brochure images using TensorFlow, Python
- Developed algorithm for title/heading extraction from scanned official documents with 80% accuracy and 25% lower inference time on edge devices using quantization
- Mentored team of 5 undergraduate and doctorate interns, providing comprehensive support and offering research guidance, training and deploying machine learning models with on-premise GPU architecture

Deep Learning Research Intern — Jul 2020 – Apr 2021
Indian Institute of Tropical Meteorology

- Implemented novel, customizable functions using Python, Matplotlib, and Seaborn for visualizing central tendency of rainfall across the Indian subcontinent over 30 years
- Performed experiments involving spatial and temporal normalization in super-resolution models
- Orchestrated research efforts for identification of correlation between diverse climate variables and rainfall and validated using Willmott's Index of Agreement

Publications

Efficient Pothole Detection using Smartphone Sensors — ICACC 2020
Pawar K., Jagtap S. and Bhoir S.

- Developed and implemented an efficient pothole detection system using smartphone sensors (accelerometer and gyroscope) and neural networks to improve road safety, achieving a classification accuracy of 94.78%

Projects

LiveStream Sensor and Location Data | *Flutter, ReactJS* — May 2024 – Jun 2024

- A Flutter mobile app to livestream accelerometer, gyroscope and GPS to Firebase Realtime Database
- A ReactJS web app hosted on Firebase to visualize sensor data from mobile app

Collectibles mobile app for Control video-game | *Flutter, Python* — Feb 2023 – Mar 2023

- Devised a mobile app using Flutter of video game Control, for users to view detailed collectible information on mobile devices
- Utilized Python with the Spyder web crawler to efficiently scrape collectible data from Fandom website
- Created a user-friendly interface by adopting UI elements and aesthetics from original source material

Technical Skills

Languages: Python, Java, C/C++, Dart, SQL, JavaScript, HTML/CSS
Courses: Coursera Deep Learning Specialization, Tensorflow in Practice Specialization, IBM Data Science Specialization
Frameworks: Flask, Django, Flutter, Tensorflow, PyTorch, ReactJS
Libraries: NumPy, Matplotlib, Spacy, Scrapy, Pandas, Xarray, Scikit-learn, openCV