Shaurya Pathak

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Education

University of California, Riverside — Riverside, CA
BS Computer Science with Business Application *GPA: 3.80 (Major GPA:4.0)* — Sep 2021 - Dec 2024

Professional Experience

NASA | City of Los Angeles — Los Angeles, CA
Student Researcher — September 2021 - Present

- Utilized satellite data to estimate PM2.5 levels in Los Angeles, achieving an impressive Root Mean Square Error (RMSE) of 1.6, showcasing accurate predictive capabilities.
- Integrated a machine learning model to automate air pollution predictions, enabling public accessibility through a website.
- Created a comprehensive live traffic count modeling system by combining static traffic count data with real-time traffic flow information.

Skills Developed: *Data Analysis/Modeling, Machine Learning Implementation, Website Integration*
Tools Used: *Python, Keras, Convolutional Neural Networks, ArcGIS, Tensorflow, Scikit, MatPlotLib, AWS (Sagemaker, EC2, Lambda), CesiumJS*

University of California, Riverside — Riverside, CA
Research Assistant — Mar 2023 - May 2023

- Extracted data from diverse sources, including YouTube, Twitter, and videos, as part of a research project led by Professor Hamed Mohsenian-Rad. Collected and processed relevant data to support the project's objectives.
- Enabled regular extraction of fire camera data from Alert Wildfire and satellite data from NASA. Ensured seamless data retrieval, contributing to the project's data acquisition and analysis capabilities.

Skills Developed: *Data Extraction and Processing, Cloud Computing and Data Management*
Tools Used: *Python, GCP (Compute, Cloud Storage), Restful API*

Klear.ai — Cypress, CA
Front End Development Intern — June 2021 - September 2021

- Developed and maintained single-page applications using Angular, AngularJS, and related technologies.
- Collaborated with designers, product managers, and stakeholders to gather requirements and deliver high-quality applications, integrating back-end functionality through RESTful APIs.

Skills Developed: *Front-end Development, Cross-functional Collaboration, API Integration*
Tools Used: *Angular, TypeScript, HTML, Github, RESTful API*

Skills

Programming Languages:	Python, Swift, JavaScript / TypeScript, HTML/CSS, C++, Git
Technology:	Artificial Intelligence, AWS, Google Cloud Platform, Front End Web Development

Projects

Multi-Pollutant Ground-level Air Pollution Prediction through Deep MeteoGCN-ConvLSTM
Python, Keras, Scikit, MatPlotLib

- Published in Book Series "Intelligent Computing" in book "Artificial Intelligence, Machine Learning, Convolutional Neural Networks and Large Language Models"
- Used only satellite data in the prognostication of ground level PM2.5 levels for the purpose of removing the need for ground based sensors to estimate PM2.5 levels.
- Created advanced interpolation techniques to increase accuracy significantly with RMSE evaluation.

Awards

Featured in NASA ESTO 2023 Report — NASA Earth Science Technology Office
Recognized for outstanding contributions and research in the creation of a digital twin of Los Angeles to simulate the results of increase usage of air taxis. Selected to be highlighted in the annual Earth Science Technology Office report. — August 2023

UCRPC Winner — University of California, Riverside
Winner at UCR Programming Competition, recognized for excellency in applications of Data Structures and Algorithms. — October 2023

Startup Tree IDEAS Competition Winner — Blackstone
Awarded in the competition for innovative business ideas and strategies. — June 2023