

Education

University of Rochester

Master of Science (MS) Data Science | GPA: 4.00/4.00

Jun 2023 – Present

Rochester, New York

Indian Institute of Technology (IIT) - Kanpur

Bachelor of Technology (B.Tech.) in Chemical Engineering | GPA: 7.33/10

Jul 2017 – May 2021

Kanpur, India

Achievements & Honors

- Recipient of 25% Merit scholarship (\$ 12,000/yr) at University of Rochester
- Recipient of Merit-Cum-Means scholarship (\$1000/yr) at IIT Kanpur for the academic year 2018-19, 2019-20, & 2020-21
- Awarded the title "Innovative Icon for Quarter-II of Financial Year 2021-2022" by Vedanta Resources PLC
- Honoured by the CEO of Vedanta Ltd. Jharsuguda for volunteerism and service towards social upliftment in rural areas
- Secured a 98 percentile in the JEE Advanced Examination - 2017 out of nearly 220,000 candidates

Research Experience

Aerial Image Semantic Segmentation

Dec 2019 – Jan 2020

Guide: *Dr. Sergey Axyonov* | Tomsk Polytechnic University

Tomsk, Russia

- Developed a real-time semantic segmentation model to identify different features such as trees, ponds, and roads in satellite images for high-altitude drones to study the climate impact of businesses and monitor any changes over time
- Prepared geospatial imagery dataset, researched ML algorithms and computer vision techniques for semantic segmentation, trained the dataset on ENET, used hybridized clustering algorithms to improve the inference speed
- Achieved 95% accuracy in identifying illegal and improved the inference speed. The project continues to deploy the program on mobile devices and drones, receiving a letter of recommendation for the contributions made

Active Particle Tracking Algorithm

May 2019 – May 2020

Guide: *Dr. Himanshu Sharma* | Indian Institute of Technology Kanpur

Kanpur, India

- Developed an algorithm to study the molecular motion of active colloidal particles on a video recorded on a microscope
- Implemented the Hungarian algorithm to identify each particle distinctly since the particles looked identical
- Used Kalman filtering to predict the particle position in the consecutive frames in the video, eliminating the problem caused due to particle overlapping. Used OpenCV to remove noise in the video and reduce false particle detection
- Achieved 95% accuracy in tracking particle position, publication in progress

Professional Experience

Vedanta Resources PLC

Jul 2021 – Jun 2023

Business Strategist - Head Coal | Vedanta Aluminum and Power Business

Jharsuguda, Odisha

- Steered digitalization initiatives for coal management department to improve processes across value chain corresponding to annual contractual consumption quantity of 20 Million Metric Tonnes
- Performed secondary market research, analyzed historical data corresponding to coal and power value chain in India, and developed PowerBI reports and dashboards to make strategy-making process data-driven
- Prepared Business plans using the reports as a basis to an annual spend base of 600 million USD, 15% drop in coal procurement costs and improved the average gross calorific value of coal procured saving \$18 Million
- Developed a hybrid forecasting model using Neural Networks and SARIMAX for predicting the Market Clearance Price of Indian Energy Exchange to strategize step-up and step-down time of the 2400MW captive power plant
- Improved the boiler efficiency by 5.5% as a result of the forecasting model, 3% reduction in specific coal consumption observed along with fewer net carbon emissions in the power generation process, making it more sustainable

Lead Quality Assurance | Vedanta's Integrated Group Commercial and Marketing (IGCM)

Mumbai, India

- Worked as a quality consultant with the group CMO to improve the quality of all finished goods made under Vedanta, improve the domestic market share in Aluminum rolled products and discover avenues for a new product
- Chartered the Group Benchmarking project aimed to improve the quality of all the finished goods in respective SKUs to the benchmark level, identify pain points in the plant processes, and improve overall customer satisfaction in India
- Collaborated with CEOs of all the business units, did market research to identify competitors, and benchmarked the quality of our products based on different physical, chemical, and mechanical parameters relevant to the SKUs
- Analyzed customer complaints data, developed PowerBI reports to identify pain points in plant processes, improved Vedanta Aluminum market share by 3% and witnessed 25% dip in complaints observed from Feb'22 - Jul'22

KPIT Technologies Pvt. Ltd.

May 2020 – Jul 2020

Data Science Intern | Corporate Internship

Pune, India

- Developed an intelligent solution for oil change in a conventional automotive with Engine Control Unit implementation
- Performed EDA and identified parameters affecting the life of engine oil using the OBD-II, J1939 data for the vehicle
- Developed classification models to predict DPF regeneration for the trips corresponding to oil cycles. Models made: XGBOOST, LDA, Logistic Regression. Achieved 97% accuracy on the test data set using XGBOOST

Social Service

PrakrAIti | *Self Initiative with support of Corporate Social Responsibility, Vedanta*

Apr 2022 – Dec 2022

- Developed and chartered the project aimed to detect and provide a solution for crop diseases using TensorFlow
- Partnered with District Administration and KVK scientists for dataset generation and image annotation
- Estimated impact to 300k farmers around Jharsuguda, plan to expand to whole state if successful

Volunteer | *Corporate Social Responsibility, Vedanta*

Jul 2021 – Jun 2023

- Taught physics, maths to underprivileged children of class 8th to 12th under digital education initiative
- Raised awareness for HIV-AIDS, fire safety and waterborne diseases surrounding villages and government schools

Technical Skills

Languages: Python, C/C++, MATLAB, SQL

Software: PowerBI, Aspen Plus, AutoCAD, SolidWorks

Publishing/Technologies: L^AT_EX, GitHub, Microsoft Office, CSS, HTML

Relevant Coursework

Data Structures and Algorithms

**Received exceptional grade*

Financial Econometrics

**Received exceptional grade*

Microeconomics

Macroeconomics

Computational Statistics

**ongoing*

Data Mining

**ongoing*

Introduction to Random Processes

**ongoing*

Online Certifications

Time Series Analysis and Forecasting using Python

(Udemy)

Deep-Learning Specialization

(Deeplearning.ai)

Introduction to Git and GitHub

(Google)

Positions of Responsibilities & Mentoring

Lead Guitarist - Ved Euhony

Jul 2021 - Present

Music Club at Vedanta Aluminum, Jharsuguda

Secretary Photography Club

Jul 2018 - Jun 2019

Media and Cultural Council, IIT Kanpur

- Regularly conducted workshops by renowned photographers and organized photo walks to increase participation among the campus community, personally mentored five freshmen in their journey to become photographers
- Represented IIT Kanpur in a team of 12 in Inter-IIT Cultural Meet 2018 organized at IIT Roorkee attended by 23 IITs
- Led a team of 10 freshmen, and represented Hall-3 in Galaxy, the inter-hostel cultural competition at IIT Kanpur, won all photography events for two consecutive years - 2018 and 2019

Senior Executive - DJ War

Jul 2018 - Nov 2018

Antaragni (National Cultural Festival of IIT Kanpur)

- Managed preliminary rounds of DJ War - a grand stage for all EDM enthusiasts and budding artists of the India
- Conducted preliminary rounds in Bangalore, Mumbai and Chandigarh, led a small team of 5 and arranged \$10,000 from local sponsors ensuring a smooth conduction of the events

Miscellaneous

- Conducted interviews as a part of Vedanta's recruitment team for internships and full-time roles in recruitment drives at IIT Kanpur, IIT Kharagpur, and IIT Delhi in 2022
- Taught physics to class 11th & 12th students affected by COVID-19 pandemic to prepare them for JEE Advanced 2021
- Volunteered as a student guide and managed 30 students at IIT Kanpur Golden Jubilee celebration in 2020