

# Amitesh R. Patil

Raleigh NC 27606 | [amiteshrpatil@gmail.com](mailto:amiteshrpatil@gmail.com) | 9196379944 | [linkedin.com/amitesh-patil/](https://www.linkedin.com/amitesh-patil/) | [github.com/Amitesh31](https://github.com/Amitesh31)

## EDUCATION

### North Carolina State University, Raleigh, NC.

May 2025

Master of Computer Science, Specialization in Data Science

GPA 3.77/4

**Coursework:** Foundations of Data Science, Database Management, Data Structures and Algorithms, Cloud Computing, Automated Learning and Data Analytics, Neural Networks, ML for Graphs, Geospatial Artificial Intelligence.

### Vishwakarma Institute of Technology, Pune, India

May 2023

Bachelor of Technology in Electronics and Telecommunication Engineering

GPA 8.76/10.00

**Coursework:** Statistics, Mathematics for ML, Computer Vision, Object Oriented Programming, Signal Processing.

## SKILLS

**Programming Languages:** Python (Pandas, Matplotlib, Scikit-learn, Pytorch, Tensorflow, Open- CV) R, MATLAB, Java.

**Tools and Frameworks:** Power BI, Tableau, SQL , Jupyter Notebook, Orange, Git, Excel, Flask

**Data Science Skills:** Data Engineering, Data Mining, Data Visualization, Statistics, Predictive Analytics, Time Series Analysis, A/B Testing, Business Analytics, Natural Language Processing (NLP)

**Machine Learning and DevOps:** Linear Regression, Decision Tree, Random Forest, SVM, PCA, K-means Clustering, CNN, RNN, Azure Databricks, Kubernetes, Apache Spark, CI/CD, Agile methodology.

## PROFESSIONAL EXPERIENCE

### R&D Data Science Intern, Halliburton Energy Services, Houston, TX

May 2024 – Aug 2024

- Analysed data from drill bit to identify factors affecting low Rate of Penetration in drilling operations.
- Developed and implemented an automated bit wear algorithm, which will result in a reduction in drilling costs.
- Create a predictive model for next well performance using confidence intervals for real time performance assessment.

### Data Science Intern, Centre for Industry 4.0 Lab, Pune, India.

Jun 2022 – Jan 2023

- Developed a real-time dashboard for monitoring temperature in paint booths, integrating Python with the POWER BI REST API supporting deployment of data science solutions.
- Built and deployed a machine learning model with to predict CNC machine tool wear with 97% accuracy, supporting predictive maintenance, reducing downtime and improving operational efficiency.

### Research Intern, Indian Institute of Technology, Kharagpur.

Aug 2021 – Feb 2022

- Analysed the effect of salinity, and time on viscosity and elasticity, of three polyacrylamide-brine solutions using statistical approaches like Box Behnken Method. Compared the results of statistical models with ML models.
- Published research paper “Response Surface Analysis of Viscosity and Elasticity of Polyacrylamide” in IOGCA.

## PROJECTS

### NLP and Machine Learning – Twitter airline reviews sentiment analysis

- Achieved 82.5% accuracy in sentiment analysis by fine-tuning a BERT model and implementing a one hidden layer neural network, outperforming baseline Naive Bayes classifier. This provides actionable insights into customer sentiment, enabling to improve service quality, identify pain points and enhance customer experience.

### Deep Learning and Web Development - Detection of COVID 19

- Designed an end-to-end web app utilizing Django providing pandemic information and predictive capabilities.
- Developed a CNN model with 98% accuracy for COVID-19 prediction using chest X-Ray images.

### Marketing Analytics- Customer Churn Prediction

- Developed a customer churn prediction model using Random Forest and XGBoost, achieving 85% accuracy. This enabled the business to proactively engage at-risk customers and improve retention strategies.
- Utilized pandas, scikit-learn and Power BI for data preprocessing, model development, visualization of insights

### Vision Transformers, Multimodal Machine Learning – Plant trait prediction

- Developed a model to predict plant traits from citizen science photographs and tabular data about plant properties.
- Implemented a SWIN Vision Transformer model that outperformed baseline models with an  $R^2$  value of 0.97 and MAE of 0.27. Provided agricultural scientists with precise plant trait predictions, enabling better biodiversity monitoring.