

Nidhi Vinayak Kulkarni

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EDUCATION

- **RV College of Engineering** July - 2027
BE in Computer Science and Engineering Bengaluru, India
 - GPA: 9.91/10.00 Upto Sem-V
- **Presidency School Bangalore South** May 2023
Grade 10 and 12- CBSE Bengaluru, India
 - Grade-12: 97.80%
 - Grade-10: 98.40%

EXPERIENCE

- **Deutsche Bank** May 2026 - July 2026
Upcoming Summer Technology Intern Bengaluru, India
- **Juniper Networks** March 2025 - December 2025
Project Contributor Bengaluru, India
 - Developed an OT/IT asset discovery and anomaly detection system for Industrial Control System (ICS) security, capable of identifying 90% of network assets across multiple subnets and detecting diverse industrial and IT protocols. Implemented LogBERT and Autoencoder-based anomaly detection with a late fusion layer, achieving 94% accuracy in log-based threat detection, enhancing network visibility and security posture in ICS environments.
- **Ambee** August 2025 - November 2025
Data Science Intern Bengaluru, India
 - As a Data Science Intern, developed eco-epidemiological models by integrating ILI (Influenza-Like Illness) records with climate data. Engineered Python pipelines using Rasterio and Geopandas to automate the preprocessing of large-scale weather and solar radiation datasets. Leveraged QGIS for spatial joins and multi-layer visualization, transforming raw raster data into actionable insights for predictive models correlating solar cycles and meteorological shifts with influenza trends.
- **Hewlett Packard Enterprise** April 2025 - August 2025
Career Preview Program-II Bengaluru, India
 - Engineered a machine learning solution to predict hardware and software downtimes as part of the Career Preview Program – Phase II. Developed and Dockerized the end-to-end ML pipeline to ensure environment consistency and scalable deployment, transforming raw system logs into proactive maintenance alerts.

PROJECTS

- **Multi-Modal Learner Style Identification and AI powered Learning Content Generation Engine** Dec 2025
Tools: Python, Cookies, VARK Model, BERT, BART, LLMs, RAG,TTS, Manim, Matplotlib, Mermaid.js, Graphviz, React, js-cookie,
 - Developed an AI-driven personalized learning platform that identifies student learning styles using VARK assessments and behavioral interaction data, leveraging BERT-based NLP and Retrieval-Augmented Generation (RAG) to generate personalized learning content. Integrated AI-based video generation and implemented a sign language conversion module with 97% accuracy to improve accessibility and engagement.
- **Agent based Analysis of Pricing strategies in Cloud Service Market** November 2025
Tools: Python, NEXT.js, Game Theory, Economics
 - Built a game-theoretic simulation of Oligopolic cloud market competition, modeling a two-stage dynamic game where providers optimize pricing and capacity and consumer agents maximize utility under switching costs. Computed Subgame Perfect Nash Equilibria (SPNE) using iterative best-response methods and numerical optimization in Python (NumPy, SciPy) for stability and welfare analysis. Developed a Next.js dashboard to visualize equilibrium convergence and market concentration across scenarios.

• Anomaly X: AI powered Network Intrusion Detection System

May 2025

Tools: Python, Flask, GNNs, Pytorch, MQTT,HTML, CSS, Javascript

- Developed an **AI-powered IoT Network Intrusion Detection System (NIDS)** using custom **Graph Neural Networks (GCNs)** built from scratch for network log analysis, achieving 95% accuracy on known attacks and 82% on zero-day threats. Integrated RF and DBSCAN models with real-time MQTT/HTTP traffic from ESP-32. Implemented a **full-stack solution** with a Flask backend and JavaScript dashboard, aligned with **NSL-KDD dataset benchmarks**.

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

- [C.1] **Securing ML Models on Websites: Face Recognition and Spoof Detection via IPFS Blockchain.** In 2025 *International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE)*, IEEE Explore. March 2025, Bengaluru.
- [C.2] **Sport-Driven Psychological Recovery: A Graph Centric, Sentiment-Aware Machine Learning Framework** - Presented to 4th International Conference on Sports Engineering- hosted by BITS Pilani, International Sports Engineering Association, UK and Ministry of Youth affairs and Sports.
- [C.3] **Exploring the Evolution of Gender Equality in Sports: A Global and Intersectional Analysis** - Presented to 4th International Conference on Sports Engineering- hosted by BITS Pilani, International Sports Engineering Association, UK and Ministry of Youth affairs and Sports.

SKILLS

- **Programming Languages:** Python, Java, C, HTML, CSS, Javascript, R
- **Database Systems:** MySQL, Firebase, MongoDB
- **Data Science & Machine Learning:** Scikit-Learn, Tensorflow, Numpy, Pandas, Matplotlib, OpenCV, GeoPandas, Rasterio, Time Series Forecasting
- **Other Libraries:** Streamlit, Flask, Node.js, Manim, Java Swing, Tkinter
- **DevOps & Version Control:** Git and Github
- **Cloud Computing** AWS Fundamentals, Web Assembly
- **Mathematical & Statistical Coursework:** Matlab, Linear Algebra, Discrete Math, Calculus, Probability, Statistics (with 10 Grade points in all)
- **Other Tools & Technologies:** Arduino, RaspberryPi, IntelliJ, Matlab Simulink, VS Code, Pycharm
- **Relevant Coursework:** Data Structures and Algorithms, Operating Systems, OOPs(Java), Computer Networks, IOT and Embedded Systems, Applied Digital Logic and Computer Organization, DBMS, AIML, Theory of Computation (with 10 Grade points in all)

ACHIEVEMENTS

- Won Seiko Award(worth Rs 30,000) at IISC Cognisance Arena: Indo-Japan Startup Competition
- Attended ACM Winter School 2025 at IISC Bangalore for Edge AI
- Won HPE Think-a-Thon 2025
- Ranked top 25 in DEKODEX coding competition organized by IIT Kharagpur among 750+ participants across India
- NPTEL – Data Science for Engineers: Topper (Top 2%), AI for Economics: Topper (Top 5%)
- Competitive Exams: KCET – AIR 295, ComedK – AIR 108, JEE Mains – 98.5 percentile, JEE Advanced – AIR 13K (Allotted IIT Indore)

LEADERSHIP EXPERIENCE

• President

October 2024 - Present

RVCE Women in Cloud Insider Circle - A student chapter supported by Women in Cloud, USA

- Founding member of the club
- Brought around Rs. 10K-20K in sponsorships
- Created an active online coding community of 300+ students
- Organiser for Code and Coffee- DSA event, Ideathon

• Machine Learning Lead

November 2024 - Present

Google Developer Groups, RVCE

- Leading the ML vertical with over 150 members. Responsible for organising and designing GDG events.