

# Vinay Varshigan

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## EDUCATION

### Master of Science, Computer Science - Northeastern University

Sep 2025 - Present

GPA: 4.0 / 4.0

Teaching Assistantship: Algorithms (CS5800)

Jan 2026 - Present

Coursework: Programming Design Paradigm using Java, Algorithms, Natural Language Processing, Software Engineering

### Bachelor of Engineering in Computer Science - ANNA UNIVERSITY

Sep 2021 - Jun 2025

GPA: 3.2 / 4.0

## SKILLS

**Programming:** Python, SQL, Java

**Data Science:** Machine Learning, Deep Learning (CNNs, Transformers), NLP, Feature Engineering, Model Evaluation

**Data Engineering :** ETL Pipelines, MySQL, SQL Optimization, AWS, Docker, Linux

**Data Analytics:** Power BI, DAX, Data Cleaning, KPI Dashboards, Visualization (Pandas, Matplotlib, Seaborn)

Tools & Libraries: Pandas, NumPy, Scikit-learn, PyTorch, Git, REST APIs, Postman

## EXPERIENCE

### Data Scientist Intern, Besant Technologies, Chennai, India

Feb 2025 - Aug 2025

- Automated **MySQL** data validation, preprocessing, and feature training using **Python (Pandas and NumPy)**, eliminating manual checks and resulting in a **60% reduction** in processing time and improved **data quality**.
- Performed **exploratory data analysis (EDA)**, feature engineering, and **SQL** query optimization to address slow data retrieval, reducing query latency by **20%** through **schema redesign** and **indexing**.
- Cleaned and clustered **genomics datasets** and created interactive **Power BI** dashboards to deliver actionable **research insights**.

### Secretary and Creative Group Head, SVCE CyberHub, Chennai, India

Apr 2023 - Dec 2024

- Led **cross-functional** student teams to plan and execute hackathons and technical events, increasing student engagement and peer-to-peer **technical collaboration**.
- Directed creative and digital strategies using analytics and design tools to improve online visibility, driving a threefold increase in social media engagement.

### Software Developer Intern, Bluebase Software Solutions, Chennai, India

Jun 2023 - Jul 2023

- Designed and deployed scalable cloud infrastructure using AWS (VPC, EC2, Auto Scaling) under senior engineer guidance to handle variable traffic loads, improving system reliability and availability.
- Automated** deployment and maintenance workflows using **Linux scripts**, reducing manual effort, eliminating errors, and streamlining **operational processes**.
- Contributed to the design and delivery of software documentation and knowledge-sharing sessions, under mentor guidance, improving team alignment and onboarding efficiency.

## PROJECTS

### Seamless Emergency Communication & Wild Animal Detection [[Project Link](#)]

- Collaborated on the development of a prototype real-time wildlife detection pipeline using Python, ResNet50, and Transformer models, enabling faster and more accurate emergency alerts in remote regions.
- Partnered with a cross-functional team to develop IoT motion sensor integration using RF and mesh networks for reliable off-grid alerting.

### Smart Food Solutions : AI Based Food & Allergen Detection [[Project Link](#)]

- Engineered a real-time food and allergen recognition model using ResNet50, InceptionV3 and Nutritionix & Allergen APIs to improve allergen identification and provide instant nutritional insights, achieving 93% accuracy

### Pocket Forecaster – AI-Powered Smartphone Recommendation Engine [[Project Link](#)]

- Developed a smartphone recommendation system using Java(OOP, MVC, Strategy pattern) to suggest phones and add-ons based on user budget, usage, and OS, delivering scalable and user friendly recommendations.
- Implemented and tested backend modules in Java and integrated a hybrid sentiment analysis model using NLP techniques (VADER and BERT) to analyze customer reviews, providing insightful ratings and improving user

decision-making confidence.

### **Retail Sales & Operations Dashboard | Power BI**

- Cleaned and transformed raw data (handling missing values, formatting, and corrections) to ensure high-quality datasets for analysis and reporting.
- Built interactive Power BI dashboards using effective data visualization and DAX measures (SUM(), parameters) to track sales, orders, and key business KPIs.
- Designed professional layouts and presented insights to non-technical stakeholders, improving business understanding and decision-making.

### **PUBLICATIONS AND PATENTS**

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- Published a **Routledge book chapter** on blockchain, smart contracts, and **AI-based** fraud detection [[Journal Link](#)] , won Best Paper Award for **heart-disease prediction** using Decision Tree, Naive Bayes, and Random Forest models (83% accuracy) [[Link](#)], and developed an **AWS-deployed** IoT water monitoring system currently under patent review [[Patent](#)]

### **CERTIFICATIONS**

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- **AWS Cloud Essentials**, Amazon Web Services. [[Link](#)]
- **Introduction to Internet of Things**, NPTEL IIT. [[Link](#)]
- **Foundations of Software Engineering and Data Management**, Northeastern University. [[Link](#)]