Vedant Ravindra Kate

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Entry-Level Software Engineer | Java, Python, JavaScript | Passion for Clean Code & Full Software Development Lifecycle

EDUCATION

- **Vishwakarma Institute of Technology Pune, India**
  Bachelor of Technology – Information Technology; CGPA: 8.5   **2022 - 2026**
- **(HSC)**
  Percentage: 84.5%   **2022**
- **(SSC)**
  Percentage: 92.4%   **2020**

PROFESSIONAL SUMMARY

Highly motivated Entry-Level Software Engineer with hands-on experience in software development, the full Software Development Lifecycle (SDLC), and building scalable, user-centric applications using modern technologies and frameworks. Proficient in coding, testing, and translating user requirements into functional systems with a focus on clean code and efficiency. Adept at working in cross-functional teams, adapting to new technologies, and delivering under pressure.

Strong foundation in problem-solving, object-oriented programming, and continuous learning. Passionate about Java development and actively exploring the fields of Artificial Intelligence and Data Science (AI/DS). Eager to contribute to impactful projects and grow as a full-stack or backend developer in dynamic tech environments.

SKILLS SUMMARY

Technical Skills:

Programming Languages: Python, JavaScript, Java, C, SQL, HTML, CSS

Frameworks/Libraries: React.js, Node.js, Express.js, Flask, Tailwind CSS, Bootstrap, OpenCV, MediaPipe

Tools & Platforms: MongoDB, MySQL, Firebase, Heroku, WebRTC, Raspberry Pi, Git, Socket.io, Clerk

Machine Learning/AI: Random Forest, XGBoost, LightGBM, CatBoost, ResNet, SHAP, LIME

Testing & Deployment: Unit Testing, Manual Testing, Heroku, Postman

Data Handling & Visualization: NumPy, Pandas, Matplotlib, Seaborn, Plotly, PDFKit

Soft Skills:
Problem-Solving, Critical Thinking, Adaptability, Responsibilities, Collaboration, Communication.

EXPERIENCE AND ACHIEVEMENTS

Work Experience

AI Research Intern – Machine Learning & Deep Learning
MITU Research Centre, Pune | Jan 2025 – May 2025
Project: *Unified Multi-Modal Predictive Model for Early Diagnosis of Diabetic Complications*

- Developed an AI-powered system to predict diabetes-induced complications in the heart, kidneys (nephropathy), and eyes (retinopathy)**.**
- Implemented advanced ML models (Random Forest, Optimized XGBoost, Gradient Boosting, LightGBM, CatBoost) for risk classification.
- Applied Explainable AI tools like SHAP and LIME for transparency and medical interpretability.
- Used ResNet-based deep learning for analyzing retinal images.
- Built a Flask API, deployed it on Heroku, and automated report generation via PDFKit**.**
- Handled complete pipeline: data preprocessing, visualization (Matplotlib, Seaborn, Plotly), model integration, and deployment.

Cybersecurity Virtual Intern
Deloitte (Remote) | Jun 2025

- Completed a virtual internship simulating real-world cybersecurity tasks handled by Deloitte's Cyber Risk Advisory team.
- Conducted risk analysis, threat detection, and vulnerability assessment on mock client systems.
- Developed security documentation and incident response plans, demonstrating professional communication and analytical skills.
- Gained exposure to regulatory compliance, data protection protocols, and enterprise-level security strategies.

Hackathons & Technical Competitions

Smart India Hackathon
National Level Innovation Challenge | 2024

- Built a software solution for **interdepartmental emergency response coordination** with a cross-functional team.

- Used agile methodologies and real-time data flows for backend processing under time constraints.
- Showcased leadership, teamwork, and problem-solving in a high-stakes environment.

Google TensorFiesta Hackathon
Google Developers Hackathon | 2024

- Designed **AI/ML-based prototypes** using TensorFlow and integrated them with **Google Cloud APIs**.
- Focused on real-world problem-solving, innovation, and deployable ML solutions.
- Built scalable, efficient models in a fast-paced, collaborative setting.

Hack-O-Hire Barclays Hackathon
Barclays Fintech Challenge | 2024

- Solved fintech domain problems through the design of secure and scalable applications.
- Applied best practices in clean code, security protocols, and enterprise development standards.
- Collaborated with peers on building full-stack solutions adhering to fintech compliance needs.

PROJECTS

AI Virtual Gym Trainer (Patent Published) : Developed an AI-powered virtual gym trainer leveraging pose estimation and deep learning for real-time posture correction and personalized training feedback. Integrated OpenCV and MediaPipe for human movement analysis, enhancing fitness tracking and coaching accuracy.

Sustainable Energy Generation from Biomass Waste: A Practical Approach Using Dry Hyacinth Combustion(Patent Published) : Developed an eco-friendly energy solution by utilizing dry hyacinth biomass for sustainable power generation. Designed a combustion-based system to convert biomass into thermal energy, optimizing efficiency through controlled burning techniques. Integrated data analysis using Python (Pandas, NumPy) for performance evaluation and emissions monitoring. Implemented a cost-effective and scalable approach to renewable energy, promoting environmental sustainability and waste management solutions.

Real-Time Chat Application with Voice & Video Integration : Developed a full-stack real-time communication platform inspired by Discord, featuring text, voice, and video chat functionalities. Implemented WebRTC for seamless audio/video calls and Socket.io for real-time messaging. Built the backend using Node.js, Express, and MongoDB, with authentication handled by Clerk. Designed an interactive React-based frontend with Tailwind CSS for a modern UI/UX. Integrated role-based access control, channel management, and file sharing, enhancing collaborative communication.

Student Course Registration System (Java + Spring Boot) : Designed and developed a Course Registration System using Java, Spring Boot, and MySQL. Implemented RESTful APIs, Spring Data JPA for persistence, and JWT-based authentication. Followed SDLC from user requirement gathering to testing and deployment with JUnit and Postman.

LEADERSHIP & EXTRA-CURRICULARS

1. 🎯 **Abhiviriddhi** – Student Development Committee
   Contributed to planning and execution of tech events and peer development programs.

2. 🌐 **Model United Nations –**
   Engaged in international-level debates, policy framing, and diplomatic simulations.

3. 💡 **ISA Club – Core Member**
   Organized coding contests, workshops, and tech fests at the institute level.

CERTIFICATIONS

1. IBM DevOps and Software Engineering Professional Certificate
Offered by IBM | Coursera | 2025

- Gained in-depth knowledge of Agile development, CI/CD pipelines, DevOps culture, containerization (Docker), Kubernetes, Git, and automated testing practices.
- Developed and deployed cloud-native applications using industry tools and practices.

2. IBM Full Stack Software Developer Professional Certificate
Offered by IBM | Coursera | 2025

- Trained in building end-to-end web applications using HTML, CSS, JavaScript, React, Node.js, Express, Flask, and Django.
- Covered backend integration, REST APIs, databases (SQL & NoSQL), version control, and application deployment.