ANKITA VILAS PIMPALKAR

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EDUCATION

M.S. in Computer Science — *George Washington University, Washington, D.C.* Aug 2024 – Present
Relevant Coursework: Software Engineering, Design and Analysis of Algorithms, Cloud Computing, Data Mining, Advanced Software Paradigms, Computer System Architecture

B.E. in Computer Science and Engineering — *Chandigarh University, Chandigarh, India* Aug 2016 – Aug 2020
Relevant Coursework: Data Structures and Algorithms, Programming in Java and Python, RDBMS, Big Data Analytics, Data Warehousing, Machine Learning, Artificial Intelligence, Operating Systems

WORK EXPERIENCE

AI/ML & Systems Engineering Intern — *George Washington University, Washington, DC* Feb 2025 – Present

- Developed Python-based NLP applications for Raspberry Pi sensor systems, implementing natural language algorithms to process data from multiple sensors, **enhancing data processing by 45%** and reducing false positives.
- Implemented **AI-driven solutions** using embedded systems, leveraging machine learning models for real-time decision making across sensor networks, **increasing automation efficiency by 30%**.
- Collaborated with **Prof. Eric Dano** to integrate Siemens Model-Based Engineering tools, supporting structured system design and creating comprehensive system architecture documentation, **improving cross-functional implementation.**

Full-Stack Developer — *Alternative Structure Group, Friends-Square, Go-Scale, India* Aug 2022 – May 2024

- Designed responsive web applications for Alternative Structure Group (fintech) using Python and MySQL, **optimizing user experience** and **increasing client retention rate**.
- Built interactive website features for Friends-Square (psychology firm) using CodeIgniter, PHP, HTML, CSS, and JavaScript, **enhancing platform functionality** and **improving user engagement by 45%**.
- Developed and **executed technical roadmap** for Go-Scale, integrating emerging technologies and providing **strategic recommendations**, accelerating **product development timelines by 25%**.

Programmer Analyst — *Cognizant Technology Solutions, Pune, India* Jun 2021 – Jul 2022

- **Deployed 100+ enterprise applications** using PowerShell scripting and SCCM, achieving a **98% deployment success rate**.
- Streamlined installation processes using **VB-Scripts and batch scripting** for applications such as Adobe Acrobat, Microsoft Office Suite, AutoCAD, and Citrix Receiver, reducing deployment time.
- Maintained SQL databases with **10,000+ records, ensuring 80% uptime** and complete **data integrity**.

PHP Developer Intern — *Talent Anywhere Services, Pune, India* Aug 2020 – Nov 2020

- Established high-performance web platform (Gujarati Sahitya Forum) using PHP, CodeIgniter, HTML/CSS, **reducing page load time by 40%**.
- Implemented secure **user authentication** and **content management system** features, enhancing **application security by 30%**, and contributed to the development of scalable web applications using core **software engineering principles**.

PROJECTS

Anomaly Detection System | *Python, Streamlit, Isolation Forest, MQTT, IoT, Raspberry Pi* GitHub

- Designed a real-time dashboard using Python, Streamlit, and the Isolation Forest algorithm, implementing adaptive threshold calibration for **sensor data analysis**, detecting anomalies.
- Integrated IoT data processing pipeline with MQTT protocol for distributed sensor networks, implementing data compression techniques to optimize bandwidth usage, **improving data collection efficiency by 40%**.

Personal Voice Assistant | *Python, Speech Recognition, NLP, REST APIs, Calendar Integration* GitHub

- Programmed a Python-based voice assistant using the SpeechRecognition library and custom NLP algorithms, automating calendar management, email filtering, and daily task prioritization.
- Utilized natural language processing capabilities, **increasing task completion efficiency by 35%.**

Handwritten Character Recognition | *TensorFlow, CNN, OpenCV, Python, Image Processing* GitHub

- Built a CNN classifier using TensorFlow/Keras with custom convolutional layers, implementing data augmentation techniques to enhance training, achieving **70% accuracy on diverse handwriting samples**.
- Devised image preprocessing workflow using OpenCV, **improving recognition performance by 25%**.

TECHNICAL AND PROFESSIONAL SKILLS

- **Programming:** Python, Java, PHP, JavaScript, SQL, PowerShell Scripting, HTML, CSS
- **Databases & Frameworks:** MongoDB, MySQL Workbench, CodeIgniter, Vue.js
- **Data Science & ML:** Pandas, NumPy, Matplotlib, TensorFlow, PyTorch, OpenCV, Scikit-learn, Linear Regression, Logistic Regression, Random Forest, SVM, Neural Networks, PCA, K-Means Clustering
- **Tools:** GitHub, Visual Studio Code, Figma, SCCM, Intune, MS Office Suite
- **Soft Skills:** Problem-Solving, Cross-Functional Collaboration, Strategic Planning, Adaptability