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, Neural Networks and Deep Learning
- **Graduate Tuition Fellowship** – *Merit-based award for academic excellence*

B.E. in Computer Science and Engineering — Chandigarh University, 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

Software Engineer (AI/ML) — *George Washington University, Washington, DC* Feb 2025 – Present

- Developing Python-based NLP applications for Raspberry Pi sensor systems by implementing natural language algorithms to process data from multiple sensors, **enhancing data processing by 45%** and reducing false positives.
- Implementing **AI-driven solutions** using embedded systems and machine learning models for real-time decision making across sensor networks, **increasing automation efficiency by 30%**.
- Collaborating 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.**

Software Engineer (Full-Stack) — *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%**.

Software Engineer — *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**.

Software Engineer 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 an image preprocessing workflow using OpenCV, **improving recognition performance by 25%**.

TECHNICAL AND PROFESSIONAL SKILLS

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