Dev Bhupendra Pandya

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Summary

A results-driven Software Engineering graduate student at Concordia University with strong experience in backend development, data processing pipelines, and AI integration. Proven ability to work independently on technically complex problems, with hands-on expertise in Python, Java, SQL, and cloud-ready solutions across industry and research environments.

Education

Concordia University, Montreal, Canada **September 2023 – May 2025**
Master of Engineering, Software Engineering

Gujarat Technological University, India **July 2019 – May 2023**
Bachelor of Engineering, Computer Engineering

Skills Summary

Languages	Python, Java, SQL, Bash, C, C++, JavaScript
Frameworks	Spring Boot, Django, Flask, MBSE (Capella), PyTorch, FastAPI, Pandas, NumPy, ReactJS, NodeJS
Tools	Docker, Git, Power BI, PostgreSQL, MySQL, SQLite, JUnit, Kubernetes (Basic)
Platforms	Linux, Windows, Arduino, Web, Azure (Basic)
Soft Skills	Analytical Thinking, Problem Solving, Collaboration, Technical Documentation, Time Management, French (Novice)

Professional Experience

Software Engineering **September 2024 – May 2025**
Bombardier *Montreal, Canada*

- Initiated a proof-of-concept plugin to extend Capella's modeling capabilities, enabling our internship usecase.
- Improved model interaction by implementing Python4Capella scripts to perform CRUD on architecture and its data efficiently
- Designed a structured SQLite-backed system to store and retrieve model metadata, enhancing traceability and performance.
- Automated repetitive modeling tasks using EASE scripting, which reduced manual workload for engineers by 40%.
- Presented plugin features and benefits to stakeholders, demonstrating improved modeling workflows and scalability potential.
- Utilized AQL to aggregate and visualize model data, supporting more informed system design decisions.

Research Intern **January 2023 – June 2023**
Indian Space Research Organisation (ISRO) *Ahmedabad, India*

- Developed a MATLAB based PPP algorithm using GNSS carrier-phase data to achieve 10–100 cm accuracy for positioning.
- Implemented Python scripts to automate extraction of orbital, temporal, and observational files, improving algo's efficiency.
- Tested algorithm accuracy using real-world GNSS datasets, validating robustness and ensuring reproducibility of results.

Research Intern **September 2022 – November 2022**
Vishwakarma Government Engineering College (VGEC) *Ahmedabad, India*

- Partnered with faculty to research IoMT applications in preventive healthcare using edge computing technologies.
- Engineered a prototype using ESP32 and temperature sensors to enable early illness detection in low-resource settings.
- Delivered a technical report and live demonstration to highlight IoMT's potential to improve real-time health monitoring.

UI/UX Intern **June 2022 – July 2022**
Cipher Brains Pvt Ltd *Science City, India*

- Learned and applied core UI/UX principles to design accessible and intuitive interfaces during a product development cycle.
- Independently designed a responsive layout for the E-PaathShaala web platform using Figma, Adobe XD, and front-end technologies (HTML, CSS, JS, Bootstrap).

Projects

IELTS Writing Evaluator | *Python, OpenAI API, Llama, FastAPI, Tkinter* **2025**

- Built an AI-powered tool to automatically grade IELTS writing tasks, aiming to provide learners with instant feedback.
- Integrated OpenAI GPT and LLaMA models to analyze writing quality across key metrics: coherence and grammar
- Designed FastAPI-based backend and Tkinter UI for interactive user input and dynamic response generation.
- Produced band score predictions aligned with IELTS official rubrics, streamlining the self-assessment process.

Geo-Spatial Satellite Image Classification | *Python, PyTorch, NumPy, Pandas, Matplotlib* **2024**

- Developed a ML solution to classify satellite images across 3 datasets, improving environmental monitoring capabilities.
- Used Python and Pandas to clean, normalize, and prepare image data for model training.
- Implemented CNN architectures (VGG16, ResNet18, AlexNet) and performed hyperparameter tuning for optimization.
- Achieved classification accuracy of 94.40% using VGG16 by optimizing training loops and dataset loading techniques.

Warzone | *Java, JUNIT, TDD, Agile, Design Patterns* **2023**

- Created a turn-based CLI game in Java by applying MVC architecture and multiple OOP design patterns.
- Applied Agile methodology and TDD using JUnit and Mockito to ensure high code coverage and reliability.
- Produced extensive documentation with Javadoc to support code maintenance and collaborative development.

HackCatcher | *Flask, Python, HTML, CSS, JS* **2020**

- Designed a web-based platform to aggregate and promote tech events to students and developers.
- Built Flask-powered backend and responsive front-end to allow real-time event discovery and filtering.
- Created visually engaging Instagram-ready templates to increase event visibility across social platforms.