

# JAYAVARDHAN BHAVIKATTI

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## PROFILE

Computer Science and Engineering student (expected graduation 2028) at Aditya College of Engineering and Technology, Bengaluru, with a strong foundation in Machine Learning, AI agent development, and software engineering. Proficient in Python and core ML frameworks (scikit-learn, TensorFlow, PyTorch); experienced with supervised/unsupervised learning, statistical modelling, probability theory, and linear algebra — the exact foundations assessed in the Amazon MLSS selection test. Capable of designing, building, and training AI agents with tool-use, memory, and multi-step reasoning using LLM APIs and agentic frameworks. Actively builds AI-powered projects and competes in hackathons to bridge theory with real-world application. Eager to learn from Amazon's Applied Scientists and deepen expertise in production-grade ML and autonomous AI systems.

## SKILLS

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| <b>AI / ML:</b>           | Machine Learning (Supervised & Unsupervised), scikit-learn, TensorFlow, PyTorch, Feature Engineering, Model Evaluation, End-to-End ML Workflows, Prompt Engineering, LLM API Integration (Anthropic, OpenAI)                                            |
| <b>AI Agents:</b>         | Designing, Building & Training AI Agents (tool-use, memory, multi-step reasoning), Agentic Workflow Architecture, Custom Agent Loops, Autonomous Task Pipelines, Delegated Authorization for AI Agents (OAuth-like protocols), Multi-agent Coordination |
| <b>Math Foundations:</b>  | Probability & Statistics, Linear Algebra (matrices, eigenvalues, SVD), Calculus fundamentals, Bayesian inference basics, Hypothesis Testing                                                                                                             |
| <b>Programming:</b>       | Python (primary), Java, C, C++, JavaScript, HTML, CSS                                                                                                                                                                                                   |
| <b>Web &amp; Backend:</b> | Full-Stack Web Development, REST API Integration, Responsive UI, Basic Deployment & Hosting                                                                                                                                                             |
| <b>CS Fundamentals:</b>   | Data Structures & Algorithms (DSA), Object-Oriented Programming, DBMS, SQL                                                                                                                                                                              |
| <b>Tools:</b>             | Git, GitHub, VS Code, Basic CI/CD Workflows                                                                                                                                                                                                             |

## PROJECTS & EXPERIENCE

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| <b>Machine Learning Project — Classification &amp; Prediction Pipeline — Self-Directed</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2024 – Present |
| <ul style="list-style-type: none"><li>Designed and trained a <b>supervised classification model</b> (scikit-learn) on a structured dataset; performed feature engineering, train/test split, and cross-validation to optimise model accuracy.</li><li>Applied core ML mathematics: computed precision/recall/F1, used <b>probability distributions</b> for class modelling, and validated model assumptions using <b>statistical hypothesis tests</b>.</li><li>Leveraged <b>linear algebra</b> concepts (matrix operations, normalisation) during preprocessing; experimented with dimensionality reduction (PCA) to improve training efficiency.</li><li>Deployed a basic inference interface, gaining hands-on experience with the complete end-to-end ML workflow — from raw data to production-ready predictions.</li></ul>                                                                                                                                                                                                             |                |
| <b>AI Agent Development — Agentic Systems &amp; Autonomous Pipelines — Self-Directed &amp; Hackathons</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2025 – Present |
| <ul style="list-style-type: none"><li>Designed and built <b>AI agents</b> powered by LLM APIs (Anthropic Claude, OpenAI GPT) capable of tool-use, persistent memory, and multi-step autonomous reasoning to complete complex tasks without human intervention at every step.</li><li>Architected <b>agentic workflow pipelines</b> with custom agent loops — defining tool schemas, handling function-calling responses, managing state across turns, and chaining sub-agents for specialised subtasks.</li><li>Built an <b>Agentic Open Banking Authorization Layer</b> (Pine Labs Hackathon 2026) — a Grantex-based OAuth-like delegated authorization protocol enabling AI agents to securely request, grant, and verify scoped permissions across financial APIs autonomously.</li><li>Explored <b>multi-agent coordination</b>: orchestrator/worker patterns, inter-agent communication, and trust boundaries — applying these patterns to build systems where agents collaborate to complete end-to-end workflows reliably.</li></ul> |                |

## Deep Learning & Neural Networks — Exploratory Projects — *Self-Directed*

2024 – Present

- Built and trained **feedforward neural networks** using TensorFlow/PyTorch on benchmark datasets; experimented with activation functions, optimisers (SGD, Adam), learning rate scheduling, and regularisation (dropout, L2) to manage overfitting.
- Studied and implemented **backpropagation** from first principles to internalise the role of gradient descent and chain rule in deep learning — directly relevant to Amazon MLSS modules.
- Explored beginner-level NLP pipelines: tokenisation, TF-IDF vectorisation, and text classification with logistic regression and basic RNN architectures.

## Web Application Developer — *Startup (High-Scale Public Product)*

2025 – Present

- Architecting and developing core frontend and backend modules for a public-facing product, handling real-world requirements around performance, reliability, and UX at scale.
- Applying REST API integration, responsive UI design, and scalable code patterns in a fast-paced, iterative environment with direct stakeholder collaboration.

## Hackathons & Competitive Coding — *Multiple Events*

2023 – Present

- Competed in multiple inter-college hackathons; reached the final round of a 24-hour event by shipping a full-stack web application (HTML, CSS, JavaScript, Python backend) from scratch with a team of four.
- Currently participating in the **Pine Labs Playground Hackathon 2026** — Agentic Authorization & Trust Infrastructure track — building an Agentic Open Banking Authorization Layer using a Grantex-based OAuth-like delegated authorization protocol for AI agents.
- Actively competes in coding challenges on platforms like LeetCode and Unstop, reinforcing DSA and algorithm problem-solving skills tested in the MLSS selection test.

## EDUCATION

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### Bachelor of Engineering — Computer Science and Engineering — *Aditya* *College of Engineering and Technology, Bengaluru*

Expected: Sept 2028

Relevant coursework: Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems, Discrete Mathematics, Probability & Statistics, Linear Algebra.

## INTERESTS

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**Technical:** Generative AI & LLMs, AI Agent Development, Neural Networks & Deep Learning, Open Source Software, Emerging Tech & Startups | **Personal:** Cricket, Chess, Tech Blogging