ARAV BHARDWAJ

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EDUCATION

Carnegie Mellon University   Pittsburgh, PA
BS in AI and Statistics and Machine Learning | GPA: 3.5   *Expected May 2028*

EXPERIENCE

Chief Technology Officer   Sep. 2025 – Present
Basics   *Pittsburgh, PA*
- Built real-time execution monitoring system across terminals, IDEs, and deployment platforms to validate actual MLOps work completion, achieving **$5K customer pilot within 2 months**
- Reduced training content creation time from **40+ hours to under 2 hours** by architecting LangGraph pipeline that automatically ingests unstructured company assets and generates MCP-validated, reproducible workflows
- Secured company traction through rapid MVP development and customer validation, advancing to **YC final-round interview** and winning **1st place at Pittsburgh pitch competition ($1.5K prize)**

Fullstack Software Engineer   May 2025 – Jul. 2025
Karini AI   *Alpharetta, GA*
- Built MCP Registry™ serving **10+ enterprise clients with centralized governance for 30+ production servers**, reducing security policy deployment from days to minutes using Next.js/React, MongoDB, and custom RBAC
- Delivered enterprise Microsoft Teams AI solution for Swagelok Southeast Texas processing **1,000+ S3 documents** with <**2s streaming responses** and **95%+ citation accuracy** using Bot Framework SDK and Azure
- Improved multi-agent workflow reliability by integrating A2A protocol for inter-agent communication and Ragas evaluation framework into LangGraph backend

Backend Software Intern   Jun. 2024 – Jul. 2024
Sparo   *Philadelphia, PA*
- Built automated LinkedIn extraction pipeline using Puppeteer and Node.js that processed **1,000+ profiles** at **120 profiles/hour** with **98% accuracy**, **reducing manual research time by 85%**
- Enhanced candidate-to-company matching by integrating connection-mapping algorithms that identified warm networking pathways, **increasing successful candidate placement rate by 30%**

Machine Learning Intern   Jun. 2023 – Jul. 2023
Dartmouth-Hitchcock Medical Center   *Hanover, NH*
- Engineered **Wasserstein GAN with gradient penalty** in **PyTorch** to synthesize colorectal tissue images from **spatial omics data**, implementing **spectral normalization** to stabilize training and reduce mode collapse
- Accelerated whole slide imaging analysis by **40%** by optimizing computational workflows on **Slurm HPC clusters**, implementing **parallelized batch processing** across distributed nodes to handle **terabyte-scale datasets**

PROJECTS

Sentinel | *Go, Python, SQLite*   github.com/abharw/sentinel
- Engineered **Go-based AI governance gateway** preventing cost overruns and enforcing compliance policies across LLM providers and MCP servers, **reducing policy deployment from hours to under 5 minutes** via **Python SDK** with programmatic policy definition
- Implemented policy engine enabling model-specific, provider-wide, and **global policy enforcement**, with integrations for **LangChain applications** and **MCP servers** with granular server/tool access control and budget enforcement

Verity | *Python, FastAPI, Next.js, Solidity, MongoDB, IPFS*   github.com/abharw/verity
- Built content authenticity platform with AI-powered detection, **IPFS** decentralized storage, and **Polygon smart contracts** for immutable verification of digital content tampering and deepfakes
- Developed production full-stack application with **FastAPI backend** managing **Web3.py blockchain transactions**, **Next.js TypeScript frontend** with user authentication, and **MongoDB** for verification history and lookup

TECHNICAL SKILLS

Languages: Python, JavaScript/TypeScript, C/C++, SQL (Postgres), HTML/CSS, R, Go
Frameworks: React, Node.js, Next.js, Flask, FastAPI, PyTorch, LangChain/LangGraph
Developer Tools: Git, Docker, AWS (EC2, SageMaker, Route53, Lambda), Azure, Slurm