Aaryan D. Wadhwani

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Full-stack & systems software engineer - C++ / Python, React, cloud-ready ML, and high-performance data structures.

EDUCATION

Purdue University (West Lafayette, IN) | GPA: 3.93/4.00 | Dean's List Aug 2023 - May 2026
B.S. Computer Science & B.S. Artificial Intelligence | Minor: Mathematics | Certificate: Applications in Data Science

EXPERIENCE

Undergraduate Data Scientist Aug 2025 - May 2026
Microsoft *West Lafayette, IN*
- Conceptualized and delivered AI-powered outcomes from publicly available datasets related to Minecraft content creation and distribution.

Undergraduate Teaching Assistant Aug 2025 - Dec 2025
Purdue University - CS 251 (DSA), CS 253 (DSA for DS/AI Majors) *West Lafayette, IN*
- Guided over 800+ collective students for assignments and project implementations of core algorithms (trees, graphs, heaps, hashmaps). Graded assignments, hosted PSO sessions and office hours for 200+ students.

Software Engineering Intern May 2025 - Aug 2025
Uniloy Inc. *Tecumseh, MI*
- Built an internal issue-tracking journal and incorporated a fully local RAG pipeline (FAISS, MiniLM, Ollama) to accelerate troubleshooting and reduce repeat queries.
- Automated global translation setup with Python scripts, cutting localization effort by over 65%.
- Engineered a lightweight server to enable real-time communication ($\sim$ 0.1s) between incompatible control systems.

Undergraduate Research Assistant | AVL Fast-Hash | Dr. Rodriguez-Rivera Oct 2024 - May 2025
Purdue University *West Lafayette, IN*
- Engineered a cache-aware AVL tree achieving 1.3×–2.1× speedups and memory usage over standard C++ implementations on benchmarks with over 500 000 keys using modern computer architecture.
- Developed a Google Benchmark micro-suite to compare against Java HashMap, V8 Dictionary, and others.
- Integrated AVL-based buckets into hash tables (AVL Fast-Hash) guaranteeing worst case $O(logn)$ operations.

Data Engineering Intern May 2024 - Aug 2024
LTIMindtree Ltd. *Mumbai, India*
- Implemented Redis-backed caching layer for SharePoint search, cutting median latency 28% for $\sim$ 2k daily users.
- Added CI workflows with GitHub Actions, cutting post-merge defects 35% and accelerating deployment cycles.

Undergraduate Data Scientist Aug 2023 - May 2024
Caterpillar Inc. *West Lafayette, IN*
- Scraped, cleaned, and joined over 60 years of global supply-chain data (2,000,000x40 entries) on 7+ key indicators.
- Trained PyCaret + Prophet pipeline approximating project related risks based on this 60-year series.
- Created an interactive PowerBI dashboard delivering live data, and real-time feedback about supply chain issues.

Web Developer Intern Jun 2023 - Jul 2023
WB Hotels *Mumbai, India*
- Shipped responsive awards page (React + Tailwind) and merged into website, showing company achievements.
- Integrated Google Places search, reducing home-page bounce rate by over 12%.

PROJECTS

StockSage AI | Python, TensorFlow/Keras, scikit-learn, Prophet, NLTK/TextBlob Mar 2025 - Jul 2025
- Built an ensemble forecasting pipeline (LSTM, XGBoost, ARIMA) with 10+ indicators (e.g. RSI, MACD, Bollinger Bands), achieving 89.5% accuracy, and 5% above the best single model.
- Incorporated real-time sentiment scoring (NLTK/TextBlob) using NewsAPI boosting model performance by 30%.
- Developed a Plotly Dash dashboard featuring live data streams, dynamic model presets, and a 5-min TTL cache.

Systems Projects | C, C++, Bash, Flex, Bison Sept 2024 - Apr 2025
- **POSIX Shell**: implemented job control, pipelines, background execution, subshells, wildcard expansion, tab completion, and command history; passed 78 unit tests with 100 % success.
- **Simple-C Compiler**: parses C code, and generates optimized x86-64 Assembly while achieving times 5-15% faster than GCC and Clang.

AtariRL | Python, PyTorch, TensorBoard, OpenAI Gym, NumPy Nov 2024 - Feb 2025
- Implemented a PyTorch DQN framework for 50+ OpenAI Gym Atari games with experience replay and target-network updates with automated checkpointing every 1,000 episodes for seamlessness.
- Logged rewards, losses, and exploration rate to TensorBoard for real-time hyperparameter tuning and monitoring.
- Created advanced visualizations to expose which game regions drove the agent's decisions and other analysis.