

Aadvait Hirde

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EDUCATION

Indiana University, Bloomington

Bloomington, IN

B.S. in Computer Science (AI & SWE Specialization), Minors: Business, Data Science

2023 - 2027

GPA: **3.95** / 4.00

• Global Engagement Scholar (**\$40,000**) • Hutton Honors Scholar (**\$12,000**) • Dean's List (3x) • Luddy Direct Admit

Relevant Coursework: DS&A, AI, OOP, Discrete Math, Data Analysis and Mining, Database Concepts, Managerial Economics, Operations Management, Accounting

LEADERSHIP

Kappa Theta Pi - Alpha Eta

Bloomington, IN

President

Jan 2025 - Present

- Founded and led IU's chapter of KTP (**the nation's largest tech fraternity**), growing to **75+ members** and managing an executive **board of 15** with a **\$10K budget**.
- Managed internal ops, marketing campaigns with **100K+ impressions**, partnerships with 5 companies and 8 clubs, university recognition, and national communication.
- Co-directed an interdisciplinary case competition. Partnering with **Meta, Humana, n8n, Google, Accenture** and **Woz** (YC W25) for speaker sessions, workshops.

EXPERIENCE

Kelley School of Business - Data Science and Artificial Intelligence Lab

Bloomington, IN

Research Assistant

Aug 2025 - Present

- Built **LLM-VulnBench**, a 100K+ sample benchmark evaluating GPT-5, Gemini, Claude, and CodeLLama code for CWE/CVSS vulnerabilities using Semgrep.
- Developed a **Docker-based pipeline** for secure LLM code generation and static analysis, integrating threat modeling principles and ensuring full sandbox isolation.
- Applied **ANOVA and logistic regression** to identify model, prompt, and IDE factors driving insecure code across 10+ LLM ecosystems.
- Summarized insights for research partners and industry reviewers through **interactive dashboards** and visualizations (Matplotlib, Pandas).

Oracle

Dubai, UAE

Software Development Intern - Oracle Cloud Infrastructure (OCI) Team

May 2024 - Aug 2024

- Built cloud management portal with Next.js, TypeScript, and Oracle APEX, implementing real-time monitoring dashboards for clients like Emirates NBD and Etisalat.
- Enhanced microservices reliability by implementing RabbitMQ message queuing, supporting 99.9% uptime SLA for Oracle Cloud's UAE deployment.
- Integrated OAuth 2.0 with Oracle IDCS APIs and NextAuth.js v4.22, implementing RBAC for multi-tenant applications serving Dubai government entities.
- Developed Stripe payment gateway integrations for Oracle NetSuite clients with webhooks and fraud detection, ensuring compliance for e-commerce implementations.
- Automated infrastructure provisioning using Terraform and OCI CLI for dev/staging environments, accelerating the team's infrastructure-as-code migration.

IBM

Dubai, UAE

Data & AI Intern - Watson & Cloud Pak Team

May 2023 - Aug 2023

- Enhanced recommendation engine using PyTorch and collaborative filtering for IBM Watson pilot with MAF (Carrefour), processing 80K+ loyalty user transactions.
- Built ETL pipelines with Apache Spark, Pandas to process 3TB+ retail datasets, reducing preprocessing time by 30% through data optimization and feature extraction.
- Conducted model evaluation using scikit-learn metrics (precision, recall, ROC-AUC), contributing to 12% accuracy improvement over baseline rule-based system.
- Fine-tuned BERT models with Transformers for Arabic-English sentiment analysis on telecom customer tickets, achieving 93% production classification accuracy.
- Deployed ML models via Flask REST APIs on IBM Cloud Foundry with Redis caching, creating documentation for internal teams to integrate inference endpoints.

PROJECTS AND RESEARCH

KTP Indiana Website & Member Portal

Jun 2025 - Jul 2025

[Website](#) • [Website Repository](#)

- Replaced Framer site with a scalable fraternity website using **Next.js 15, TypeScript, and Tailwind CSS**, serving **75+ members** with **Clerk + Supabase** RBAC auth.
- Created a real-time internships board syncing **500+ listings/day** from GitHub via **cron jobs**, with markdown parsing, 1-hour caching, and automated Vercel updates.
- Engineered dynamic UI with **Radix** primitives, infinite scroll carousels, responsive design patterns and custom animations, streamlined for smooth desktop/mobile UX.
- Developed a full-featured **member portal** with real-time announcements, **GCal sync**, merch store, payment gateway, alumni directory, and a **5-role RBAC** system.

Forecasting Cryptocurrency Prices with Transformers and Stance Detection

Jun 2022 - Nov 2022

[IEEE Xplore](#) • [PDF](#)

- Fine-tuned **RoBERTa** for stance detection on 50K+ Bitcoin-related tweets, achieved **80% sentiment accuracy**, **\$1144.85 MAE** in price prediction with tweet polarity.
- Preprocessed collected data with **sklearn**, then aligned social and market data with the **Twitter API** and yfinance, integrating with Bitcoin prices over a 3-month span.
- Achieved baseline **78% logistic regression accuracy**, trained RNNs using Adam optimizer, used **GridSearchCV** and Bayesian tuning for further model improvement.

The Locus Project

Aug 2022 - Nov 2022

[Article](#) • [GitHub Repository](#)

- Built an **AR indoor navigation app** in Unity using **C#, AR Foundation, ARKit/ARCore**, and Depth APIs; enabled real-time pathfinding with **<1m location accuracy**.
- Architected a **scale 3D campus model** and QR-based tracking system, mapping **200+ classrooms** to navigation targets via **scene management and line rendering**.
- Engineered AR interactions, object placement, and UI flow across **100+** unique scenes, tested system latency and path precision across **iOS & Android** environments.

SKILLS AND CERTIFICATIONS

Languages & Frameworks: Java, Python, TS, JS, HTML, CSS, SQL, Racket, React, Next.js, Vue.js, Node.js, Express.js, Tailwind, Bootstrap, Shadcn/ui, Radix, GSAP
Tools & Infra: Prisma, Drizzle, Supabase, Clerk, Zustand, Zod, tRPC, Stripe, RabbitMQ, GraphQL, OAuth, GitHub, MLFlow, Power BI, Tableau, LangChain, Pinecone
ML & Software: TensorFlow, PyTorch, Keras, Scikit-learn, Pandas, NumPy, Matplotlib, Unity, Semgrep, DaVinci Resolve, FL Studio, MS Office, AWS, GCP