

# Ibrahim Shahid

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## EDUCATION

Virginia Commonwealth University

Computer Science | BS

Richmond, VA

Graduation Date: Dec 2027

## WORK EXPERIENCE

ICNA Relief

Full-Stack Engineer

Remote

Mar 2026 - Present

- Architected a **Laravel 12** health fair operations platform for **ICNA Relief**, unifying **client search, registration, and multi-station clinical screenings** (blood pressure, lipids, glucose/A1c, anemia) into a single volunteer workflow that syncs to **Salesforce** in real time during live community health events.
- Engineered a resilient **Salesforce Apex REST** integration using **OAuth 2.0 client credentials** with **cached token lifecycle management, automatic 401 recovery, and configurable HTTP retries**, exposing endpoints for health fairs, client vitals, screenings, and per-station segment updates.
- Containerized production deployment with **multi-stage Docker** builds (**PHP 8.3-FPM, Nginx, MySQL 8.4, Traefik + Let's Encrypt**), enabling reliable **HTTPS** hosting for field health fair operations.

Al Madina School Of Richmond

Full-Stack Engineer

Hybrid, Midlothian, VA

Nov 2025 - Mar 2026

- Architected a **high-concurrency bidding engine** using **optimistic locking and row-level serialization** (FOR UPDATE) to guarantee **zero race conditions** during high-frequency bidding wars effectively eliminating double-spending risks.
- Engineered a **hybrid search system** combining traditional relational filtering with **AI-powered vector similarity search**, enabling semantic discovery of visually similar artworks alongside standard metadata queries.
- Built an **end-to-end type-safe RPC layer** using **Hono** and **ORPC**, achieving **100% type safety** across the full stack and significantly accelerating feature velocity by eliminating runtime data validation errors.

Penta

AI Engineer

Midlothian, VA

Jan 2025 - May 2025

- Architected a secure, high-throughput RAG (Retrieval-Augmented Generation) system and **analyzed failure modes such as hallucination and context poisoning**, implementing retrieval constraints and chunking strategies that improved factual consistency and reduced misleading outputs in ambiguous queries
- Designed and evaluated context selection pipelines for a conversational AI agent, **experimenting with embedding retrieval strategies and ranking methods** to optimize relevance vs. noise, reducing incorrect or low-confidence responses by 30%
- Engineered a scalable API layer for concurrent LLM interactions, **stress-testing system behavior under adversarial or malformed inputs** to improve robustness and ensure stable, context-aware dialogue under high load

Virginia Commonwealth University

AI Research in Digital Forensics

Richmond, VA

Jun 2024 - Aug 2024

- Investigated the use of machine learning for anomaly detection in digital forensic data, **evaluating model performance under noisy and adversarial conditions** to assess reliability in real-world investigative scenarios
- Developed and tested ML pipelines for automated forensic analysis, **analyzing tradeoffs between detection accuracy and false positives** in high-stakes cybersecurity contexts
- Explored applications of computer vision and NLP for forensic intelligence, **studying how model outputs could be misled or manipulated by crafted inputs**, with implications for AI system trustworthiness

## PROJECT EXPERIENCE

Personal

AISSISTANT (Local Voice AI)

Midlothian, VA

Apr 2025 - Jul 2025

- Built a local, on-device voice assistant integrating LLM inference and custom TTS, **prioritizing privacy-preserving AI deployment and eliminating reliance on external APIs for sensitive data processing**
- Fine-tuned a neural TTS model and evaluated output consistency across edge cases, **analyzing robustness to unusual phonetic inputs and potential misuse scenarios (e.g., voice spoofing risks)**
- Engineered a multimodal interaction pipeline (OCR + voice), **testing system behavior across noisy and ambiguous inputs to improve reliability in real-world usage conditions**

## SKILLS

**TTS/AI:** Text-to-Speech (TTS), Model Fine-Tuning, Voice Cloning, Audio Processing, RAG, PyTorch, Python

**Backend:** Go (Golang), WebSockets, Real-time Streaming, API Design, Low-Latency Systems