# FERRIS MOHAMMED

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## PROFESSIONAL SUMMARY

Results-driven software engineer with over 5 years of experience in AI-driven automation, IoT, machine learning, and real-time systems. Proven expertise in developing industrial automation, embedded systems, and cloud-native applications. Collaborative by nature, adept at working across disciplines to deliver high-performance, AI-driven solutions for automation, smart infrastructure, and biomedical research. Passionate about leveraging the synergy between software, hardware, and AI to create scalable and efficient systems.

## ACCOMPLISHMENTS

- Achieved Drug Trials by introducing a Virtual Lab Analytics tool I built for testing Drug/Compound effectiveness against Neurotoxins *in Silico*.
- **Reduced deployment time by 80%** by **automating CentOS & AlmaLinux provisioning** with **Kickstart scripts and RPM packaging**, streamlining field device setup.
- **Led the development of AI-driven automation systems** (SmartStop, SmartLoader, and Sonny's Digital Queue), improving **efficiency and accuracy** in vehicle detection and wash automation.
- **Improved data processing speed by 40%** through **Redis caching and RabbitMQ messaging queues**, ensuring **real-time event handling** in automation systems.

## SKILLS

- FRONTEND: HTML & CSS, REACTJS/NEXTJS, RETOOL

- BACKEND: FASTAPI, NODEJS, GOLANG

- DESKTOP DEVELOPMENT: ELECTRON.JS

- DATA SCIENCE & ANALYTICS: PANDAS, NUMPY, SCIPY

- MACHINE LEARNING & AI: PYTORCH, TENSORFLOW, OPENCV, LANGCHAIN

- VIDEO & STREAMING: GSTREAMER, FFMPEG, RTSP, WEBRTC

- INDUSTRIAL IOT & AUTOMATION: OPC UA, MODBUS, MQTT, PLC INTEGRATION

- BIG DATA & APACHE ECOSYSTEM: APACHE SPARK, KAFKA, HADOOP

- CI/CD: HARNESS, GITHUB ACTIONS, JENKINS

- DATABASE: MONGODB, MYSQL, POSTGRES, CHROMADB

## WORK HISTORY

**Founder / Principal Software Engineer** | FullStack Ferris Solutions LLC - Remote

*08/2025 - Current*

- Delivered platformized automation for **Sony Music Latin** digital operations, improving throughput and reducing cycle time by **~85%** via standardized pipelines, QA gates, and repeatable execution.
- Built Python data pipelines (**Pandas, NumPy, Jupyter**) to ingest/scrape, normalize, validate, and generate bulk-ready metadata templates for catalog operations and publishing.
- Developing internal services with **FastAPI** to expose reusable endpoints for metadata enrichment, VSEO/SEO optimization checks, and export formats with audit-friendly diffs.
- Implemented LLM-assisted automation via **LangChain + ChromaDB RAG** to generate consistent, template-grounded titles/descriptions/tags and optimization suggestions from existing catalog data and rules.
- Laying groundwork for operator-facing tooling in **Next.js** (review/approval flows, QA, and reporting dashboards) to productize internal ops workflows.

**R&D Engineer** | Sonny's Enterprises - Tamarac, FL    *08/2023 - 05/2025*

- Contributed to AI-driven automation across Sonny's SmartStop, SmartLoader, and Digital Queue, helping ship edge + cloud features used in production wash sites.
- Built and iterated real-time video analytics + ML inference pipelines using **NVIDIA DeepStream, GStreamer, OpenCV, TensorFlow**, improving detection and automation reliability under latency constraints.
- Implemented OCR/LPR workflows with **OpenCV + TensorFlow** to support subscription validation and personalized wash logic, balancing accuracy, speed, and operational edge constraints.
- Built AI-enabled microservices on AWS (**Lambda, API Gateway, DynamoDB, OpenSearch**) that support vehicle detection and wash-routing decisions, integrating edge signals with cloud services.
- Integrated industrial controllers and PLCs (**WAGO, Schneider**) and field IO (**MOXA**) via **Modbus, OPC UA, MQTT**, improving device communication and control loops.
- Developed cloud-connected service layers (**FastAPI, Node.js**) enabling secure data exchange between edge devices and operator tooling.
- Built operator-facing control panels in **React, Electron, Next.js** for live guidance, monitoring, and operational decisioning.
- Built low-latency streaming/recording workflows with **FFmpeg, RTSP, WebRTC, WebSockets** for live + playback video in production environments.
- Automated and standardized provisioning for Linux edge fleets (**CentOS, AlmaLinux**) using **Kickstart + RPM packaging**, improving deployment consistency.
- Supported hybrid edge infrastructure using **AWS Greengrass, Azure IoT, Docker, Kubernetes**, improving deployability and operational stability across sites.
- Improved event responsiveness with **Redis caching + RabbitMQ messaging** for real-time automation triggers.
- Integrated with **Go-based Device Manager services** to support secure device identity verification/authentication in an edge-to-cloud architecture.

**Biological Software Developer** | Gateway Institute For Brain Research - Davie, FL

*02/2021 - 11/2022*

- Partnered with pharmacists, lab scientists, and mathematicians to build data-driven web tools for **neurodegenerative disease research**.

- Developed interactive lab simulation platforms using **React**, **D3**, **Three.js**, and **Flask** to visualize experimental outcomes and accelerate drug efficacy testing.
- Built RESTful Flask apps integrating internal and third-party APIs; managed data with **PostgreSQL**.
- Modeled patient treatment paths for Parkinson's using **Python**, **Numpy**, **Scipy**, and **Pandas** by serializing clinical data into analysis-ready formats.
- Created computational pathway models and custom visualizations to support hypothesis testing and experimental validation.
- Deployed research apps on **Google Cloud Platform** for internal and cross-institutional access.

**Lead Full-Stack Developer** | FIU Department - Miami, FL          *06/2020 - 12/2020*

- Led a cross-platform mobile app project for dietetics and applied nutrition research, **Snackability**
- Developed a food scoring algorithm to evaluate **nutritional value** and compared food contents with USDA standards.
- Built a search feature using local and USDA databases.
- Worked closely with Developers and Professors to deliver a **user-friendly app** to incentivize healthy dieting
- Utilized **React-Native**, **Node.js**, **MySQL** for development stack
- Utilized **Firebase** and **Express** user-authentication and routing
- Utilized **Expo** and **Heroku** for Deployment

**Software Test Engineer** | SiriusXM Satellite Radio - Deerfield Beach, FL

- Conducted regression testing and submitted observations to development team.          *11/2017 - 11/2018*
- Optimized test cases to maximize success of manual software testing using JIRA.
- Tested R&D tech Connected Car Solutions that monitor real-time vehicle location relative to other vehicles along with providing user safety features for crash alerts and collision warning.

## EDUCATION

Florida International University - Miami, FL          *12/2020*
**Bachelor of Science**: Computer Science

## LANGUAGES

English