Daivik Girish

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EDUCATION

- **New Jersey Institute of Technology, New Jersey** *January 2024 – May 2025*
  Master of Science in Computer Engineering (GPA 3.68/4.0)
  Coursework: Embedded Systems, Computer Architecture, Discrete Events Dynamic Systems, Computational Intelligence, Computer Networking, Internet and Higher Layer Protocols, Semiconductor Devices, DSA, Java, Machine Learning.
- **Global Academy of Technology, VTU, India** *August 2016 – August 2020*
  Bachelor of Engineering in Electronics and Communication Engineering (GPA 3.2/4.0)

TECHNICAL SKILLS

- **Programming & Embedded Development:** Embedded C, C, C++, Python, STM32 (F4 Series), STM32CubeIDE, CMSIS-DSP, Interrupts, DMA, ADC, USART, I2C, SPI, Real-Time Processing.
- **Microcontrollers & Sensors:** STM32F446RE, ESP8266, MAX9814, DHT22, Raspberry Pi, GPIO Handling, Signal Acquisition.
- **IoT & Connectivity:** WiFi Integration (ESP8266), Flask REST APIs, MQTT, USB/Serial Communication, Cloud Sync (AWS/GCP), Data Logging.
- **Web & Cloud Integration:** Flask (Python), React, RESTful APIs, MongoDB, AWS, Google Cloud Platform.
- **Version Control & Tools:** Git, GitHub, Postman, Logic Analyzers, Debugging with ST-Link.
- **AI & Optimization (Edge-ready):** CMSIS-DSP, FIR/IIR Filters, Genetic Algorithms, PyTorch, Signal Processing.
- **Development Practices**: Agile, Unit Testing, Buffer Management, Latency Optimization, Power-Efficient Design.

PROJECTS

IoT-Based Temperature & Humidity Monitoring System */STM32 | ESP8266 | Flask | React | MongoDB | AWS |*

- Engineered a **full-stack IoT system** using **STM32**, **ESP8266**, and **DHT22**, transmitting sensor data every 30 seconds via **WiFi** to a **Flask REST API**, with storage of **1000+ timestamped records/day** in **MongoDB** and periodic sync to **AWS Cloud**.
- Developed a **real-time React dashboard** with **Chart.js**, enabling dynamic data visualization and boosting **monitoring efficiency by 80%** through automated cloud-integrated insights.

Audio Noise Cancellation */STM32 | MAX9814 | Embedded-C | USART |*

- Developed a **real-time audio noise cancellation system** using **STM32F446RE**, **MAX9814 microphone**, and **Embedded C**, capturing live audio and applying **FIR filters** via **CMSIS-DSP** to suppress background noise and enable clean playback.
- Leveraged **ADC with DMA** for efficient, non-blocking data capture, and implemented **USB/USART streaming**, **buffering**, and **interrupt-driven processing**, achieving low-latency, high-fidelity audio output on a connected PC.

Genetic Algorithm for Image Reconstruction | *Genetic Algorithm | Python | PyTorch | Google Colab |*

- Designed and implemented a **GPU-accelerated genetic algorithm** in **PyTorch** for high-performance image reconstruction, optimizing both speed and quality.
- Engineered **custom genetic operators**, **blending crossover, Gaussian mutation,** and a local search **(Bees Algorithm)**, leading to a **30% acceleration** in convergence speed and improved image fidelity.
- **Leveraged** PyTorch's parallel processing capabilities**, achieving a** 5x speedup **over traditional CPU-based approaches, significantly enhancing computational efficiency.**

PROFESSIONAL EXPERIENCE

Infosys | *Senior Systems Engineer* *May 2021 – November 2023*

- Spearheaded development of **end-to-end SAP CAPM solutions** using **SAP Fiori**, **SAP UI5**, **JavaScript**, and **Java**, boosting **user productivity by 20%** in an **Agile environment** and ensuring seamless **front-end/back-end integration** across **3–4 interconnected applications** on **SAP BTP**.
- Enhanced **security and compliance** by implementing **XSUAA** for **user authentication** and managing **6+ complex datasets** via **SQL** and **SAP HANA DB**, driving **data-informed decisions** and improving **system efficiency by 15%**.
- Improved **application reliability** by **28%** through expanded **unit test coverage** and resolving **32+ bugs**; integrated **SAP Launchpad** to streamline **user access** and deliver a better **navigation experience**.

Knowx Innovations Pvt Ltd. | *Intern* *July 2019 - August 2019*

- Designed and deployed a **scalable IoT home automation system** using Raspberry Pi, Python, and Google Cloud, improving system efficiency by **15%** and enhancing security measures.
- Utilized **Google Cloud Platform(SaaS)** for data storage, real-time communication, and remote control, increasing connectivity and accessibility across multiple locations.
- Overcame integration challenges by developing robust Python scripts and leveraging Google Cloud APIs, ensuring seamless hardware-cloud integration.