**Aditya Kommi**

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**Professional Summary**

* Software Engineer with over 3 years of experience specializing in machine learning, embedded systems, and AI integration, with a track record of delivering robust software solutions in dynamic enterprise and defense environments.
* Strong proficiency in C++, Python, Java, Embedded C, and experience with Docker, Git.
* Skilled in TensorFlow, PyTorch, and OpenCV, with practical experience in integrating ML models into production systems.
* Strong analytical skills with the ability to tackle complex technical challenges.
* Leverages technical, functional, and financial acumen to communicate, identify, and develop requirements to meet stakeholder needs and manage expectations.
* Excellent analytical and critical thinking skills with attention to detail
* Effective communicator with experience presenting to technical and non-technical audiences.
* Proven leadership in project management and team coordination.

**Technical Skills**

* **Programming Languages**: C++, Python, Java, Embedded C, CUDA C, VHDL, Assembly
* **Machine Learning**: TensorFlow, PyTorch, OpenCV, Computer Vision, Federated Learning
* **Software Development**: Linux (RHEL), Docker, Git, CI/CD, Agile Methodologies
* **Cloud Platforms**: AWS, Azure, GCP
* **Embedded Systems**: NVIDIA Jetson Nano, Raspberry Pi, TI MSP430, Xilinx Basys3, Arduino Nano IoT
* **Tools & Technologies**: MATLAB, Jupyter Notebook, Android Studio, KiCad, Vivado, PSPICE
* **Networking Protocols**: Wi-Fi, Bluetooth Low Energy, RS232

**Professional Experience**

**Software Engineer / Chief Marketing Officer**

**KGR Distribution / Dr. Natural USA** | North Brunswick, NJ | Sept 2023 – Present

* **Enterprise Software Implementation**:
  + Project Highlight: Designed the architecture stack of the enterprise software solution to modernize logistics and supply chain operations. Implemented data analytics platforms for real-time inventory tracking and demand forecasting, increasing operational efficiency by **35%**.
  + Responsibilities:
    - Collaborated with external teams to build and implement the system.
    - Provided detailed system designs and functional specifications.
* **Financial Systems Automation**: Developed automated invoicing and payment tracking systems, reducing overdue payments by **85%**. Integrated financial software with existing CRM systems to streamline operations.
* **Vendor Management Software**: Built and deployed an application to manage vendor relations and product cataloging, improving procurement efficiency by **30%**.
* **Leadership**: Served as the primary technical resource, advising on IT infrastructure upgrades and cybersecurity best practices. Trained staff on new software tools and platforms, enhancing team productivity. Established the marketing team, developed marketing strategies, and led a social media overhaul to boost brand presence.

**AI Integration Engineer**

**General Atomics Aeronautical Systems, Inc.** | Poway, CA | Apr 2022 – Sept 2023

* Integrated machine learning models into unmanned systems for enhanced ISR and autonomous flight capabilities. Launched the first completely Autonomous UAS Flight using Avenger MQ-20A and commanded the AI pilot using mission directives.
* <https://www.ga.com/ga-asi-flies-completly-autonomous-uas-flight-using-avenger>
* Collaborated with data scientists to create models and optimize algorithms for real-time processing on embedded platforms, improving system responsiveness by **20%** and module start-up time by 30%.
* Involved in all phases of the software development life cycle from requirement analysis to deployment, adhering to Agile methodologies.
* Deployed applications using Docker containers for consistency across development and production environments.
* Worked closely with hardware engineers to ensure seamless integration between software and hardware components. Assisted in developing communication protocols for secure data transmission.
* Collaborated with engineers from external companies such as Starlink, Northrop Grumman, and Lockheed Martin on their projects and integrating them for flight tests.
* Answered stakeholder and client questions during presentations and test flights.
* Technologies Used: Multicast, OMS messaging, Python, C++, Bash, Docker, RL agents, IRST, CODE autonomy engine

**Embedded Systems Engineer Intern**

**General Atomics Electromagnetic Systems** | Fredericksburg, VA | May 2020 – Aug 2020

* Developed firmware for proprietary hardware interfaces, enhancing system performance.
* Cost Effective Solutions:
  + Engineered custom communication cables leveraging the RS232 protocol to interface with hydraulic press
  + Wrote a java program to read data into CSVs for data collection and analyze tests
  + Impact: Achieving cost savings of **94%** per unit by creating in-house solutions instead of purchasing proprietary hardware and software.
* Automation Tools:
  + Created Java-based applications for automating inventory management tasks and implemented a scanning system, increasing operational efficiency by **25%**.
* Conducted research on Monolithic 3D-IC design, contributing insights to future hardware manufacturing processes.

**IT Infrastructure Intern**

**Fort LP** | Chevy Chase, MD | May 2019 – Aug 2019

* **Data Backup Automation**: Automated backup processes for critical financial data using shell scripting and cloud services.
* **Virtual Environment Management**: Set up and maintained VMware environments for testing and development purposes.
* **Systems Evaluation**: Evaluated unified communication systems, leading to the adoption of a more efficient platform and reducing operational costs by **20%**.

**Projects**

**Adaptive Traffic Sign Detection System | Senior Design Project**

**Jan 2021 – Dec 2021**

* **Role**: Project Manager & Lead Developer
* **Technologies Used**: NVIDIA Jetson Nano, Python, OpenCV, TensorFlow
* **Project Overview**: Developed an AI-powered traffic sign detection system optimized for adverse weather conditions. Implemented convolutional neural networks and pre-processing techniques to enhance detection accuracy.
* **Key Achievements**:
  + Improved model’s detection accuracy by **25%** under challenging conditions compared to original model.
  + Incorporated federated learning for decentralized model updates, enhancing system adaptability.
  + Integrated location-based predictive caching to reduce latency and improve performance.

**Education**

**Master of Science in Computer Science**

**Georgia Institute of Technology** | Atlanta, GA | Aug 2024 – Present

* **Concentration**: Machine Learning
* **Relevant Coursework**: Machine Learning for Trading

**Bachelor of Science in Electrical & Computer Engineering**

**George Mason University** | Fairfax, VA | Aug 2019 – Dec 2021

* **Concentrations**: Computer Architecture, Embedded Systems (IoT), Machine Learning
* **Relevant Coursework**:
  + **Graduate Level**: Internet of Things, Mobile Systems & Applications, Learning From Data
  + **Undergraduate Level**: FPGA/ASIC Design with VHDL, Device Driver Development, Operating Systems, Embedded Hardware Interfaces, Computer Networking, Data Structures, MATLAB Programming
* **Activities**:
  + **Co-Founder**: GMU Inventors and Innovations Team
  + **Member**: GMU Satellite Communications Club