GAHAN SARAIYA

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OBJECTIVE

With over 6+ years of experience as a Senior Software Engineer, currently working at AMD India Pvt Ltd. for managing AI/ML workload execution on HPC device (GPU). I possess a strong command over Python, HPC, UEFI Firmware, and DevOps, complemented by a thorough understanding of their workflows and architectures. My enthusiasm for open-source contribution and knowledge dissemination reflects my commitment to being a philanthropist in the realm of technology. I am eager to channel my expertise into the architectural design of optimized quantum machine learning algorithms tailored for multi-programming environments, as well as to explore the synergies between these cutting-edge technologies and DevOps practices.

EDUCATION

M.Tech Computer Science   Jul 2018 - Jun 2020
Nirma University, GPA: 8.49

B.E. in Computer Science and Engineering   Aug 2013 - Apr 2017 Gujarat Technological University,
CGPA: 8.08

12th Science, GSHSEB, Class XII   Jun 2011 - Mar 2013
Science Stream, 74.92%

GSHSEB, Class X   Jun 2010 - Mar 2011
81.4%

SOFTWARE TOOLS

Languages	Python, C, Rust, Shell Scripting, SQL, LaTeX, YAML
Frameworks	Tensorflow, Pytorch, Pytest, Edk2, Django, PyCUDA, Pandas, Tkinter, Selenium, Octave
Tools and Services	GitHub Actions, Restful APIs, Teamcity, Terraform, Docker, Docker Compose, Jenkins, GiT, Prezi
Cloud Technologies	GCP, AWS, Digital Ocean, JFrog Artifactory, TeamCity, JIRA, AWS Sage Maker

EXPERIENCE

Senior System Software Designer at AMD India Pvt Ltd   Mar 2024 - Present

- Functional coverage and performance benchmarking of HPC devices (GPUs). This involved developing and executing comprehensive test suites to evaluate the functionality and performance of various HPC GPUs, ensuring they meet industry standards.

- Incorporation of state-of-the-art industry standards design models. This included implementing and utilizing frameworks like TensorFlow, PyTorch, and various matrix operations to optimize and enhance the performance of HPC applications.

- Collaboration with a diverse team of engineers and researchers. This could involve working closely with other experts to develop and implement innovative solutions for HPC applications.

- Reaching and maintaining expected accuracy of model through Jenkins CI job.

- Planning and Designing Software Architecture.

Senior Firmware Development Engineer at Intel Technology India Pvt Ltd   Oct 2023 - Mar 2024

- Platform provisioning and infrastructure setup for mass automation of HPC products.

- Platform Orchestration Layer design of Universal Scalable Firmware (USF).

- Harnessing Azure OpenAI Generative AI adaptation for Firmware Development Productivity for assessment code review, guidance, basic security checks of code.

- Terraform deployments for environment for on-the-go dev environment over kubernetes cluster. (including setting up a node platform from scratch)

- GitHub Action and JIRA integration for managing Continuous deployment and test through CloudBees Jenkins.

- Migrating Jenkins node from baremetal usage to docker contanered usage for parallel utilization.

Firmware Development Engineer at Intel Technology India Pvt Ltd   Jun 2020 - Sept 2023

- As the Platform Lead for the next generation client platform and architecture design at USF POL, responsibility span across domains, including Automation Framework, Platform Provisioning, Applied Generative AI & Prompt Engineering for productivity enhancement and Quantum Firmware Design.

- The end-to-end Software Development Life Cycle is managed, which includes licensing, legals, and IP planning, as well as applicable Code Security and Static Code Analysis.

- Jenkins configuration for Security tools - Snyk, Coverity

- Improving github code review hooks for python packaging and linting through bandit and flask as Jeninks pipeline.

- Additionally, the automated testing of functional validation of Firmware with TeamCity and Jenkins is overseen, and the publishing of artifacts on Artifactory, along with managing webhooks on JIRA.

- Mentoring and knowledge development engagement activities

Firmware Engineer Intern at Intel Technology India Pvt Ltd   Jun 2019 - May 2020

- BIOS Firmware Development for Client products with the framework EDK2, UEFI Firmware, Involvement with assessing new debugging solutions and OpenBoard Package

Teaching Assistantship at Nirma University   Aug 2018 - May 2019

- Data Mining and Visulaization

Software Developer at Quixom Technology   Jul 2017 - Apr 2018

- SaaS-Employee management system (chat, surveys, benchmark, analytics...) and Restful API Development; socket programming in python to receive continuous data from IoT device and display chunks of data meaningfully, web portal for rendering dynamic menu content in Kodi

Freelance Developer   2015 - Apr 2019

- Cloud solution for Data gathering and webscraping with selenium and GCP.

- Designing template and banners for High resolution prints

- Inventory management system for Book store with Django.

PROJECTS

Prompt Engineering and Generative AI for firmware stack   2023 - 2024
Description: Solution design for accelerated silicon tape-in with accelerating firmware deliveries

- Azure Open AI services with GPT 3.5 and GPT 4

- Summarization of work ticket

- Code Review against standard static code analysis and common vulnerabilities

- Code Enhancement suggestion

Platform Provisioning with Pre-Production Reference Board 2023 - 2024

Description: Platform Provisioning with automating most common features for pre-production server processor such as:

- Remote BMC and BIOS Firmware Flashing

- OS Deployment from artifactory

- Boot to EFI Shell and OS

Universal Scalable Firmware 2022 - 2024

Description: Architecture design of Platform orchestration layer for Firmware Configuration

- Motivation of workgroup - Firmware Configuration – Past, Present, and Future

- Firmware Configuration

Firmware Automation Framework 2020 - Present

Description: Lead SDL for an automation foundation framework for high scaled volume of silicon devices with edk2 UEFI firmware;

- Seamless configuration of system without any manual intervention for BIOS configuration.

- SDL activities like legal compliance, security, licensing, static code analysis

- Continuous deployment and test with jenkins and tox configurations

- Release Artifact management to JFrog Artifactory using GitHub Actions

- https://github.com/intel/xml-cli

Multiview Video Summarization 2019 - 2020

Description: Summarizing video of multiple view angles of egocentric location in to one to generate effective video summary, minimizing overhead to explore multiple cam feed to discover accidents or anomalies.

Consummating Research Projects using Agile Manifesto 2018

Description: Utilization of Agile Manifesto for consummating research projects. Enlightening the appropriateness of Scrum for the research projects which is a widely used agile manifesto at present in the software industry.

Inventory Management and GST Billing for Mobile Shop 2018

Description: To avoid the headache of manual billing automated GST billing system designed to manage stocks and update according to purchase and sales and generate GST invoice for sales.

Streaming Box 2017 - 2018

Description: An alternate streaming service to DTH and providing easy customized IPTV streaming service based on Kodi (formerly xbmc) Framework

- Backend Streaming Service, authentication and server security with Django Framework and REST API

- Web Portal to enable vendor customize Streaming Front-end UI for their users

- Cross compilation and Native compilation to enable various platform support as Android, Windows and MacOS

ACHIEVEMENTS & CO-CURRICULAR ACTIVITIES

2023	Firmware Configuration Presentation at UEFI Developers Conference & Plugfest
2023	Tech Talk on Harnessing Multiprogramming across CPU, GPU and Quantum Processing Unit
2019-Present	4000+ reputation on Stackoverflow
2017-Present	Active volunteer on Peer Learning, Cultural and team building activity
2018	Rank #1 for Python challenges on hackerrank
2018	Rank #112 from 2lacs+ participants in Techgig's National Coding Contest 2018
2014	Establishment of complete network for Department

PUBLICATIONS

- A Review on Honeypot : Track the Attack. NCCICT, 2016   2016

- Firmware Configuration – Past, Present, and Future. Presentation, UEFI DevCon 2023   2023