Gaurav Agarwal

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Summary

I have 7+ years of experience spanning all phases of the software development lifecycle, with a proven track record of delivering results in diverse environments which includes cutting-edge aerospace R&D labs, agile startups, and large-scale enterprises. What drives me is to deepen my expertise, embrace state-of-the-art technologies, and contribute to forward-thinking organizations by developing technology-agnostic, innovative solutions in challenging and dynamic domains.

Work Experience

Boeing India Pvt. Ltd. *Bengaluru, India*

Software Engineer 2 | Embedded & Avionics Systems *Nov'19 - Present*

- Designed, developed, and maintained architectures, requirements, algorithms, interfaces, and designs for avionics software systems across diverse product lines. Conducted feasibility studies, created robust architectures, and collaborated with cross-functional teams to ensure alignment with regulatory standards.
- Architected and integrated software components into fully functional systems leveraging RTOS or Linux-based platforms, utilizing a variety of programming languages and technologies. Conducted in-depth requirements analysis, architectural design, and peer reviews, ensuring full traceability and the delivery of maintainable, high-quality software solutions.
- Developed and maintained build infrastructure, platform services, middleware frameworks, real-time communication protocols, diagnostic tools, and mission-critical application software for avionics systems, ensuring high scalability, performance optimization, fault tolerance, secure data handling, and seamless integration across flight and hardware-in-the-loop simulation environments
- Configured custom hardware architectures and optimized Board Support Packages, including U-Boot, kernel, custom Yocto recipe-based root file systems, cross-compilation toolchains, and device trees, to enable efficient secure boot processes and enhance runtime performance for custom hardware platforms.
- Designed and implemented automated CI/CD pipelines with GitLab CI and Docker, streamlining build, integration, and deployment processes to ensure consistent and reliable software releases.

Team Indus (Axiom Research Labs Pvt. Ltd.) *Bengaluru, India*

Flight Software Engineer | Integrated Avionics | Command & Data Handling *Jan.'17 - Oct'19*

- Developing software systems for orbital, descent and surface phases of the soft landing lunar mission, with onboard state estimation, autonomous attitude correction, lunar terrain feature tracking, active thermal and power control, interface drivers for sensors peripherals and other interfacing cards, with limited fault detection, isolation, and recovery.
- Developed framework for Processor in Loop Simulation (PiLS) system emulating sensor and actuator electrical interfaces to lander avionics unit.

Technical Skills

Programming Languages	C, C++, Python, Bash, Go, Java, SQL, Matlab & Simulink, LaTeX
Embedded Development	Linux (Yocto, Buildroot), RTOS (DEOS, VxWorks, FreeRTOS), Device Drivers, BSP
DevOps & Tools	Git, GitLab CI/CD, Jenkins, Vagrant, Doxygen, CVE, Polyspace, Postman
Communication Protocols	UART, SPI, I2C, CAN, ARINC, ADC, HTTP/HTTPS, REST APIs, TCP/IP, MQTT, FTP
Cloud & Networking	AWS (EC2, S3, Lambda), Nginx, Docker, Kubernetes, Load Balancers

Education

P.E.S Institute of Technology, Autonomous Institute under VTU, Belgaum *Bengaluru, India*

B.E in Electrical and Electronics Engineering *Aug.'13 - May'17*

- GPA: 8.93/10.00

Kerala Samajam Model School *Jamshedpur, India*

I.C.S.E, I.S.C in Pure Science with Computer Application *Mar'99 - May'13*

- ICSE: 93.4%, ISC: 88.75%