

Prateek Suraksha Bhushan

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PROFESSIONAL SUMMARY

Principal Technical Leader with over 14 years of experience driving the design, architecture, and deployment of mission-critical, real-time systems for the defense, aviation, and industrial sectors. Proven track record of transitioning complex technical programs from conceptualization to global scale deployment, specializing in tight hardware-software coupling, multi-sensor data feeds, and high-availability systems. Currently pursuing a PhD focused on Unsupervised Domain Adaptation (UDA), combining rigorous C++ architecture with advanced machine learning paradigms to transfer predictive models from simulated environments to real-world edge devices without labeled data. Contributing actively through AI Native Organization journey through AI based SDLC.

KEY SKILLS

Leadership & Domain Strategy:

End-to-End Technology Program Ownership, Requirement Grooming & Architecture Design, Client & Global Stakeholder Management, Establishing Business Partnership to increase business engagement. Global Ownership of critical modules

Architecture & Engineering

C, C++, C++11, Qt Framework, Real-Time Multithreading & Socket Programming, Unsupervised Domain Adaptation (UDA), Applied AI, Sensor Fusion

EXPERIENCE

System Software Engineer & Software Architect, John Deere, Pune 12/2022-PRESENT

Nature of Work

- End-to-End Technology Program Ownership
- Requirement Grooming & Architecture Design
- Individual Contributor for Technology Driven Programs.
- Software Design and Architecture Discussions, Code Reviews
- Leading AI adoption in complete software development life cycle
- Defect triag

Deputy Manager, Bharat Electronics Limited (BEL), Ghaziabad 12/2011 – 12/2022

Nature of Work

- Take lead and develop a product right from conceptualization to feature development to testing, deployment and maintenance.
- Work closely with diverse stakeholders, clients and other team and ensure to provide them with technical solutions.
- Design, development, coding, configuration, testing, debugging and deployment of efficient, stable and scalable software applications for radar systems involving strong coupling between multiple hardware, software, and live feed from various sensors.
- Development of real time software applications through application of concepts like multithreading, socket programming, inter-process communication; file handling, STL, signal and slot mechanism.
- Develop algorithms for 4D trajectory calculation, flight plan data processing and safety nets scenarios.

Projects:

1. **Multi-Sensor Fusion Application** for ATM Automation System is a backend application which receives real time surveillance data over ethernet from a number of sensors.
 - Requirement analysis, design & development of software to handle non-synchronous update rate.
 - Implementation of kalman filters algorithms for generating position estimation reports.
 - Maintain history reports of each track through implementation of vector STL in C++.
 - Unit level testing and Integration testing of the software along with POC and user trails.
2. **Squadron Command Control** for Indian Air Force: A frontend application developed in Motif, upgraded and redeveloped in C++ with Qt framework.
 - Understanding user requirement, and preparing software requirement specification and designing of user interface.
 - Development of user interface (GUI) to display real time targets along with identification and representation of alerts to the controller.
 - Development of algorithms for identification of friend and foe targets and generate autosuggestions.
 - Software unit testing and integration testing along with deployment at various sites across India.
3. **Local Control and Monitoring Panel** application is used to control and monitor radar parameters. It is critical software developed with extreme dedication to meet strict deadlines.
 - Designing ICD as per operational requirement, and design of user interfaces in consultation with user.
 - Full Stack development of the LCMS software in C/C++ and Qt, by implementing concepts like multithreading, STL, OOPS, Qt signal and slot mechanism, vectors etc.

- Unit and integration testing and user acceptance.

CERTIFICATIONS, AWARDS & PUBLICATIONS

- INSAAN Award: Secured 1st prize in Indian National Suggestion Scheme Association (01/2017).
- Publications:” A scheme for Prevention of Flooding Attack in Wireless sensor Network”, Vol 1 No. 2 June 2011
- 1 Patent submitted in US Patent Organization

EDUCATION

- PhD Computer Science and Engineering, Indian Institute Of Information Technology, Jabalpur (08/2024 – In Progress)
- MTech (Information Tech.)- Indian Institute Of Information Technology, Allahabad, (07/2009 - 07/2011)
- BE Computer Science and Engineering, Jabalpur Engineering College, Jabalpur, (09/2005 - 07/2009)