

# Ashish Dubey

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## Executive Summary

Experienced embedded software architect and technical leader with over 15 years in software development, system design, testing, and cybersecurity compliance. Adept in HIL (Hardware in loop) simulation, integration testing, and leading global teams. Architected and delivered a rapid C-based prototype for Boeing, saving \$2M+ and cutting cycle time by 80% at Honeywell. Spearheaded CI and testing automation with Python, generating \$600K in savings.

## Education

**University of Washington, Michael G. Foster School of Business**

Seattle, USA

*M.S. in Information Systems(Ongoing)*

*Jun 2025 – 2026*

- **Focus Areas:** Linear regression, AI, ML, Cloud computing, Cybersecurity, Generative AI and Business leadership

**Rajiv Gandhi Proudhyogiki Vishwavidyalaya**

Bhopal, INDIA

*B.E. in Information Technology*

*Jun 2004 – 2008*

- **Coursework:** computer algorithms, data structures, Embedded C, operating systems, AI, Micro Controller

## Skills

- **Leadership:** Project Planning, Customer Interaction, Procurement, Risk Management, Estimation Model, Quote Estimation, Agile, CI
- **Python Libraries:** Pandas, NumPy, Nixnet, xlrd, Socket, Subprocess, XML, ctypes, Matplotlib, PyTorch, Scikit-learn
- **Platforms:** DEOS, Green Hills A653 RTOS, VxWorks, Bare Metal
- **Hardware Platforms:** PPC 750, MIPS RM7965, ARM A53, R5 Cortex
- **Programming Languages:** Embedded C, Python, C#, SQL
- **Configuration Management:** PVCS, ClearCase, CM21, ClearQuest, SVN
- **IDE & Probes:** CodeWarrior, Code Composer Studio, Eclipse, Google Colab, JTAG, DataTrac, Oscilloscope, Picoscope, Signal Generator, Labview Xnet
- **Standards & Protocols:** A429, CAN, A664, RS422, TFTP, DO-254, DO-178C
- **Modeling & Simulation:** MATLAB-Simulink & Stateflow, Extendsim
- **Simulation Tools:** EASE simulation, Integration, proprietary test hardware

## Professional Experience

**Honeywell Aerospace**

Phoenix, USA

*Senior Advanced Embedded Engineer*

*Jul 2022 – Jun 2025*

- **Software Architecture & Integration:** Architected and integrated safety critical flight control software and hardware, driving the development of efficient components for eVTOL programs with near-perfect accuracy.
- **Driver Development and Simulation:** Designed and developed A429 drivers and simulations and created an RS422 device driver for the Vertical eVTOL program.
- **Test Automation and Cost Savings:** Automated the hardware test lab with Python and LabVIEW, resulting in over \$1 million in savings, additionally reduce the cycle time by 80%.
- **Project Management and Client Relations:** Managed project planning, progress tracking, and risk mitigation while maintaining constant client communication.
- **Verification and Validation Expertise:** Led verification and validation for Level-A software, with hands-on experience using various debugging tools.

- **Safety-Critical Software Development:** Designed and developed flight control systems software modules for the Boeing 787 and Comac 919 using Embedded C on GHS & DEOS RTOS, achieving a defect density of approximately 0.001
- **Airborne Application Engineering:** Created critical airborne applications, including FADEC (Engine Control Unit), Maintenance Systems, Door Sliding, and Landing Gear Control systems, all with a defect density of approximately 0.002%.
- **Test Automation and Savings:** Automated the hardware test lab using C#, which resulted in savings of approximately 2,000 man-hours, or \$2 million. Also, automated A429 C code generation with Python scripts, saving 400 man-hours on three UAM programs.
- **Hardware and Software Integration:** Performed software and hardware integration for flight control modules and developed boot initialization code for Xilinx Zynq hardware.
- **Team Leadership and Mentorship:** Mentored team members and aligned them with project goals, while also taking ownership of new program planning, resource loading, and cost estimation.

- **Software Development and Defect Resolution:** Designed and developed flight control software modules for the Embraer ERJ170, Gulfstream G650, and Comac ARJ21 using Embedded C. Fixed reported flight test defects with 100% accuracy.
- **Automation and Process Improvement:** Automated multiple software development and testing processes by creating tools such as a Boot Loader and a Post Software Verifier, which resulted in a savings of approximately 3,000 man-hours across four programs.
- **Comprehensive Software Analysis:** Performed structural coverage analysis, code coverage analysis, and data and control coupling analysis. Ensured the removal of dead code with a 99.9% accuracy while also collecting data on software worst-case execution time and memory margin.
- **Test Planning and Debugging:** Developed test plans and conducted HIL software debugging on proprietary hardware.
- **Process Definition and Mentorship:** Defined software development processes to meet various industry regulations. Mentored team members and provided leadership in project planning and execution.

- **Wing Ice Protection Systems:** Designed and developed software modules for Boeing 787 with 0.02% defect density.
- **System Integration & Testing:** Performed software integration and component testing for safety critical certified applications.
- **Boot Code Development:** Developed boot-up code for Boeing's 787 Wing Ice Protection system and Mitsubishi's MRJ21 Data Concentrating Unit.
- **Flash Driver Architecture:** Architected flash memory drivers for NVM read and write operations with 0.01% defect density.

## Certifications & Recognitions

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- Three **Trade secret ideas** logged with Honeywell and two of them are in eVTOL UAM product lines.
- Completed classroom certification of '**Software Security Practitioner- Architect**' from ISC2 in the field of Cybersecurity.
- Certified **Six Sigma Green Belt** and awarded best Six Sigma Green Belt project in Honeywell globally
- Certified **Embedded Systems Professional** – Cranes Software
- Received **Top Flyer Award** two times from President, Honeywell for Flight Control module reset issue debugging & fixing along with automating the HW test procedures.
- **Individual Excellence Award** for contribution towards development and integration of critical functionalities.
- **Team Excellence Award** on several occasions to ensure team meets the milestones despite scope creep.
- **Spot Award** on several occasions for contribution in projects, initiatives and HOS activities.