Intiser Kabir
Design and Analysis Electrical Engineer
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Professional Summary

Results-driven Design and Analysis Engineer with expertise in safety-critical system verification, automation, and compliance within aerospace and embedded systems. Skilled in leveraging Python, MATLAB, and OpenCV for process optimization, risk reduction, and safety compliance. Expanding expertise in data analytics, machine learning, and photonics research. Strong cross-functional collaboration abilities, delivering impactful engineering solutions.

Key Achievements

- **Process Optimization & Automation:** Reduced review time by 30% for 3,000+ requirement validations using MATLAB automation. Automated requirement traceability, achieving 100% coverage for safety-critical systems.
- **Safety & Compliance:** Led 55+ Functional Hazard Assessments (FHA) for ARP4754A compliance and risk mitigation. Authored Preliminary System Safety Assessments (PSSA) for Boeing 737-10 MAX modifications.
- **Verification & Testing:** Directed 13% of testing activities, securing first-round approval for two Detailed Test Procedures (DTPs). Developed logic diagrams in Visual Studio for Specification Control Documents.
- **Risk & Fault Analysis:** Conducted Fault Tree Analysis (FTA), validating safety margins for Minor, Major, and Catastrophic functions.

Core Competencies

Programming Languages: MATLAB, Python, VBA, PSIM, C++, C#, Java
Embedded Systems Development: Arduino Uno, Simulink, Raspberry Pi
Systems Engineering & Safety Compliance: ARP4754A, FHA, PSSA, Fault Tree Analysis
Optical & Photonics Research: Metasurface fabrication, COMSOL, Lumerical, Optical characterization
Cybersecurity Principles: Encryption, Network Security Protocols, Risk Assessment
Requirements Validation & Verification: DOORS, Change Impact Assessments, Model Coverage Analysis, DTP
Tools & Software: MATLAB, Simulink, Python, DOORS, JIRA, GitLab, OpenCV, Raspberry Pi, Excel, AutoCAD, Visual Studio, Minitab
Soft Skills: Cross-Functional Collaboration, Stakeholder Alignment, Agile Methodologies, Regulatory Compliance, Technical Problem-Solving, Task Prioritization, Growth Mindset

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Professional Experience

Design and Analysis Engineer II
Boeing, Everett, WA | July 2022 – Present

- Validated 85% of system requirements for the Boeing 737-10 MAX Stall Management System, ensuring functional alignment and ARP4754A compliance.
- Led Change Impact Assessments (CIA) to evaluate safety impacts and verification needs, ensuring compliance with Parent-Child Requirement relationships.

- Performed Model Coverage Analysis (MCA) for validation and verification against parental requirements.
- Automated requirement validation using MATLAB, optimizing review processes for 3,000+ requirements, reducing time by 30%.
- Conducted 55 Functional Hazard Assessments (FHA) to identify and mitigate risks, ensuring system safety and regulatory compliance.
- Authored Preliminary System Safety Assessments (PSSA) for Boeing 737-10 MAX modifications, aligning with ARP4754A.

System Engineering Intern
Boeing, Remote | May 2021 – Aug 2021

- Integrated 10+ CATIA V5 applications into Boeing's 3DX platform, streamlining design processes.
- Streamlined software portfolio, identifying legacy tools for retirement, reducing maintenance costs.
- Resolved compatibility challenges for CATIA V5 and 3DX integration, ensuring system continuity.
- Delivered training briefings, improving team proficiency and cutting training time.

Engineering Intern
Boeing, Everett, WA | May 2018 – Aug 2018

- Tested, debugged, and validated the Stall Management Yaw Damper (SMYD) for Boeing 737-8 MAX using PSIM, ensuring performance and safety compliance.
- Authored certification documents, aligning designs with regulatory requirements.
- Facilitated cross-system integration with the Electronic CAB system, ensuring seamless functionality.

Research Experience

Graduate Research Assistant – Programmable Phase-Change Metasurfaces
University of Washington, Department of Electrical Engineering | Jan 2025 – Present

- Conducting research on cleanroom-free fabrication of programmable optical metasurfaces using CD writers and commercial CDs.
- Designing and fabricating micro- and nano-scale structures for photonics applications.
- Performing electromagnetic simulations and optical characterization using Lumerical, COMSOL, and MATLAB.
- Collaborating with faculty and senior researchers to develop novel photonic devices.
- Documenting findings for peer-reviewed publications and conference presentations.

Projects

Autonomous Drone Landing Using OpenCV
Master's Program, Cal Poly Pomona | Spring 2022

- Developed an autonomous drone capable of locating and landing on a target landing pad using computer vision.
- Implemented OpenCV on a Raspberry Pi to detect and track landing pads, relaying precise flight instructions.
- Integrated camera and GPS sensors to enhance spatial awareness and precision landing.

Theo Jansen Biped Robot
Senior Design, Project Manager Role, CSU Long Beach | Spring 2018

- Led a cross-functional team to design and build a BiPed robot using Theo Jansen leg mechanics and motor-driven motion.

- Managed project budget, completing the project 20% under budget through efficient resource allocation.
- Ensured timely task completion, driving project milestones and team accountability.

Education

Master of Science (M.S.) in Electrical Engineering
Cal Poly Pomona | May 2022
Specialization in Embedded Systems, Software Engineering, and Nanoelectronics.

Master of Science (M.S.) in Physics
University of Washington | Expected June 2026
Focus on Electromagnetic Theory, Semiconductor Physics, and Quantum Computing.

Master of Business Administration (MBA) in Data Analytics
Eastern Washington University | Expected June 2026

Bachelor of Science (B.S.) in Electrical Engineering & Bachelor of Arts (B.A.) in Physics
CSU Long Beach | Dec 2018

Professional Affiliations

- Member, Institute of Electrical and Electronics Engineers (IEEE)

Certifications & Licenses

- Food Safety Manager Certification (ANSI Certified)
