Intiser Kabir
Design and Analysis Electrical Engineer | US Citizen – Clearance Eligible
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Professional Summary

Accomplished Design and Analysis Engineer with extensive experience in safety-critical system verification, automation, and regulatory compliance within the aerospace industry. Proven expertise in ensuring compliance with DO-178B, DO-178C, DO-254, and ARP4754A standards for safety-critical aviation systems, including the Boeing 737-10 MAX Stall Management System (SMYD). Skilled in requirement traceability, risk mitigation, and functional hazard assessments, with a track record of streamlining processes and enhancing safety compliance through automation using MATLAB and Python. Adept at leading verification activities, collaborating with cross-functional teams, and driving system enhancements, including the integration of the Enhanced Angle of Attack (eAOA) system. Actively expanding expertise in data analytics, machine learning, and photonics research to drive innovation in engineering solutions.

Key Achievements

- **Safety Compliance:**
  Ensured compliance with DO-178B, DO-178C, and DO-254 standards for the Boeing 737-10 MAX Stall Management System (SMYD), aligning with FAA certification requirements and enhancing safety-critical systems.

- **Requirement Traceability:**
  Streamlined requirement mapping processes for system adaptation to the Enhanced Angle of Attack (eAOA) system, achieving full traceability and alignment with parent requirements.

- **Verification & Testing:**
  Directed verification efforts, including testing of the SMYD box, PSIM, and BITE logic, achieving first-round approval for 13% of testing activities and authoring two Detailed Test Procedures (DTPs).

- **Automation:**
  Developed MATLAB automation tools to validate over 3,000 system requirements, reducing review time by 30%.

- **Risk Mitigation:**
  Conducted 55+ Functional Hazard Assessments (FHA) and authored Preliminary System Safety Assessments (PSSA), ensuring compliance with ARP4754A and mitigating risks for Minor, Major, and Catastrophic functions.

- **System Enhancements:**
  Enhanced the SMYD system to include the eAOA functionality, improving critical features such as Minimal Maneuver Speed, Pitch Limit Indication (PLI), Autoslat, and Elevator Feel Shift (EFS).

- **Cross-Functional Collaboration:**
  Collaborated with SEIT Engineers, Flight Science, and suppliers to integrate avionic software requirements, ensuring smooth system implementation and compliance.

Core Competencies

Programming & Tools:

- MATLAB, Python, VBA, PSIM, C++, C#, Java, OpenCV
- DOORS, JIRA, GitLab, AutoCAD, Visual Studio, Minitab
- SHELL scripting for testing and data logging
- MATLAB for automation and data analysis

Systems Engineering & Safety Compliance:

- DO-178B, DO-178C, DO-254, ARP4754A
- Requirement Traceability, Model Coverage Analysis, Fault Tree Analysis (FTA)
- Functional Hazard Assessments (FHA), Change Impact Assessments (CIA)
- Documentation review: Software Design Description (SDD), System Characterization Document (SCD), Local Work Instructions (LWI)

Embedded Systems & Testing:

- System testing for verification activities (SMYD box, PSIM, BITE logic, and Software Configuration Index)
- PSIM for controlling engine parameters and validating results
- Testing and validation of avionic systems, including Enhanced Angle of Attack (eAOA)

Soft Skills:

- Cross-Functional Collaboration with teams including SEIT Engineers, Flight Science, and Program Leadership
- Stakeholder Management and Coordination with suppliers and leadership teams
- Strong Documentation and Process Optimization skills
- Regulatory Compliance and Export Control

Research & Projects

This section highlights key research and technical projects that demonstrate my expertise in aerospace, embedded systems, photonics, and data analytics. These projects showcase my ability to apply engineering principles, develop innovative solutions, and collaborate in cross-disciplinary environments.

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.

Graduate 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.

Undergraduate Projects

Theo Jansen Biped Robot

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

Engineering & Technical Experience

Throughout my career, I have taken on leadership roles in engineering projects, mentoring junior engineers and collaborating with cross-functional teams to drive innovation and efficiency.

Design and Analysis Engineer II

Boeing, Everett, WA | July 2022 – February 2025

- Spearheaded compliance with DO-178B (Supplier level), DO-178C (Design Assurance Level (DAL)), and DO-254 aviation safety standards for the Boeing 737-10 MAX Stall Management System (SMYD), aligning with FAA certification requirements.
- Conducted requirement traceability to map system requirements with parent requirements for new, modified, or affected requirements in the Enhanced Angle of Attack (eAOA) system.
- Collaborated across teams including SEIT Engineers, Flight Science, Flight Controls, Yaw Damper, ARIDU, and suppliers to refine avionic software requirements and ensure seamless system integration.
- Conducted testing and validation for SMYD components, including BITE logic, PSIM operations, and Software Configuration Index (SCI), using tools like PSIM and SHELL commands to log and validate engine parameters and toggle logic bits.
- Enhanced SMYD functionalities by incorporating eAOA features, improving critical systems such as Flight Control Minimal Maneuver Speed, Bent Vane, and Elevator Feel Shift.
- Validated 85% of the Boeing 737-10 MAX SMYD system requirements, ensuring ARP4754A compliance, while automating validation for over 3,000 requirements using MATLAB, reducing review time by 30%.
- Directed verification activities, achieving first-round approval for 13% of all test efforts and authoring Detailed Test Procedures (DTPs).
- Conducted over 55 Functional Hazard Assessments (FHA) and authored Preliminary System Safety Assessments (PSSA), ensuring adherence to safety-critical standards and mitigating risks.
- Performed Model Coverage Analysis (MCA) and led Change Impact Assessments (CIA) to ensure alignment of safety-critical requirements between parent and child systems.
- Developed logic diagrams in Visual Studio for Specification Control Documents and conducted Fault Tree Analysis (FTA) to validate safety margins across hazard levels.
- Authored and updated Local Work Instructions (LWIs) for requirement management and control configurations while ensuring adherence to export control regulations.
- Reviewed and refined essential documentation, including Software Design Descriptions (SDD) and System Characterization Documents (SCD), to maintain compliance and operational clarity.

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, and 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.

Electric Assembly Technician

New Bedford Panoramx | Aug 2021 – Oct 2021

- Assembled and tested electronic and electromechanical components for airport runway lighting fixtures.
- Conducted soldering, wiring, and troubleshooting to meet FAA safety and performance guidelines.
- Collaborated with engineers, supply chain teams, and sales representatives to enhance product functionality.

Leadership & Operational Experience

Zone Lead

Amazon, La Habra, CA | Nov 2021 – Apr 2022

- Led and supervised operational workflows, ensuring adherence to standard operating procedures (SOPs).
- Trained and mentored associates, improving process efficiency and reducing errors.
- Managed inventory operations, system workflows, and quality assurance measures.

FC Associate I, Direct

Amazon, Greater Los Angeles | Apr 2019 – Nov 2021

- Provided exceptional customer service by efficiently fulfilling orders and managing inventory logistics.
- Engaged in cross-departmental collaboration with Whole Foods teams to ensure product availability.
- Assisted team members in maintaining high operational performance and workplace efficiency.

Assembly Line Worker

L.A. Lighting, El Monte, CA | Jan 2020 – Aug 2020

- Assembled and wired over 10,000+ lighting fixtures, maintaining quality standards and production efficiency.
- Utilized power tools for precision assembly and ensured compliance with technical specifications.

Education & Mentorship Experience

MEP Supplemental Instruction Facilitator

California State Polytechnic University, Pomona | Sep 2020 – May 2021

- Provided one-on-one and group tutoring in C++ and Statistics, supporting 10+ students.
- Conducted academic mentorship and documented progress tracking for continuous improvement.

Additional Work Experience

- **Enumerator** | U.S. Census Bureau | Aug 2020 – Oct 2020
- **Loader** | California Cartage Company | Jul 2016 – Aug 2016

Education

Master of Science (M.S.) in Physics

University of Washington | Expected June 2026

- Focus on **Electromagnetic Theory, Semiconductor Physics, and Quantum Computing**.
- Coursework: **Electromagnetic Theory, Quantum Physics, Applications of Quantum Physics, Applications of Electromagnetic Theory, Semiconductor Physics, Quantum Devices, Integrated Systems Photonics, Quantum Information Practicum, Thesis**.

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

- Coursework: **Business Intelligence for Managers, Data Visualizations for Managers, Business Forecasting for Managers, Machine Learning and Artificial Intelligence for Business, Essentials of Operations Management, Data Driven Decision Making, Corporate Finance, Marketing Management, Leadership and Ethics, Advanced Accounting for Managers, MBA Capstone**

Master of Science (M.S.) in Electrical Engineering
Cal Poly Pomona | May 2022

- Specialization in **Embedded Systems, Software Engineering, and Nanoelectronics**.
- Coursework: **Network Security, Research Methods, Wireless Communication Systems Lab, Data Structures and Algorithms, Embedded Systems, Nanoelectronics, Numerical Modeling, Software Engineering, Digital Signal Processing, Performance Reliability Analysis, Random Processes, Master's Degree Project**.

Bachelor of Science (B.S.) in Electrical Engineering & Physics with a Minor in Applied Mathematics
CSU Long Beach | Dec 2018

- Coursework: **Circuit Analysis, Digital Logic Design, Quantum Mechanics, Differential Equations, Electromagnetic Fields, Signals & Systems, Energy Conversion, Probability & Statistics, Analog Electronic Circuits, Microprocessors, Solid State Electronics, Control Systems, Communication Systems, Digital Signal Processing, Robotics, Power Electronics, Engineering Design Project**.

Certifications & Licenses

- **Currently Enrolled & Studying for:**
  - Fundamentals of Engineering (FE) Exam (Target: Summer 2025)
- **Refresher Courses:**
  - MATLAB Programming for Engineers and Scientists
  - MathWorks Computer Vision Engineer
  - Python for Everybody
  - MATLAB Associate Certification (Expected 2025)
- **Hardware & PLC Certifications to Consider:**
  - Rockwell Automation ControlLogix PLC Programming (Planned 2026)
  - Siemens S7 PLC Programming Certification (Planned 2026)
  - National Instruments Certified LabVIEW Developer (Planned 2026)
  - IPC CID+ Certification for PCB Design (Planned 2026)
  - FPGA Design and Verification Certification (Planned 2026)
- **Software & Programming Certifications to Consider:**
  - Coding for Everyone: C and C++ (Planned 2025)
  - Introduction to Programming with C# (Planned 2025)
  - Java Programming and Software Engineering Fundamentals (Planned 2025)
- **Data Science & AI Certifications to Consider:**
  - Google Data Analytics Certification (Planned 2025)
  - IBM AI Engineering Professional Certificate (Planned 2026)
  - Google TensorFlow Developer Certificate (Planned 2025)
  - AWS Certified Machine Learning – Specialty (Planned 2026)
  - Google Advanced Data Analytics Certification (Planned 2026)
  - Quantum Computing & Machine Learning – IBM or MITx (Planned 2026)
- **Systems & Engineering Certifications to Consider:**
  - Certified Systems Engineering Professional (CSEP) – INCOSE (Planned 2026)

    - SAFe Agile Certification – Scaled Agile (Planned 2026)
    - Embedded Systems Professional Certificate – IEEE (Planned 2026)
    - Six Sigma Green Belt & Black Belt Certification (Planned 2026)
    - PMI Project Management Professional (PMP) Certification (Planned 2026)
    - SPIE Photonics Certification (Planned 2026)
- **Completed:**
    - Food Safety Manager Certification (ANSI Certified)

Professional Affiliations

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