

Ghouse Tazeem Mohd

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Professional Summary

Aircraft Digital Twin & Electrical Integration Engineer with experience developing scan-based digital twin models for aircraft re-manufacture programs. Specialized in CATIA Electrical workbenches, equipment modeling, routing provision assembly design, and full harness routing within as-built aircraft geometry. Experienced in cross-functional ECAD collaboration, configuration-accurate modeling, and preparing for deviation analysis between as-designed and as-built aircraft structures.

Education

Wichita State University

Master's in Computer and Information Sciences – CGPA: 3.7 / 4.0

Aug 2024 – May 2026

Wichita, US

Osmania University (MJCT)

Bachelor's in Electronics and Communication Engineering – CGPA: 7.8 / 10.0

Aug 2020 – Apr 2024

Hyderabad, India

Experience

National Institute of Aviation Research (NIAR), Wichita, KS

Digital Twin Systems Engineer (Research Assistant)

May 2025 – Present

Work on aircraft re-manufacture program developing a configuration-accurate digital twin of a retired aircraft platform prior to production restart.

Electrical Equipment Modeling & Electrification

- Modeled and electrified **80+** electrical equipment components using **CATIA Part Design**, GSD, and Electrical workbenches based on scan-captured aircraft data.
- Developed equipment models aligned with **organizational modeling standards** and catalog definitions.
- Prepared components for logical-to-physical integration within full aircraft electrical architecture.

Routing Provision Engineering

- Designed and placed **4,000+** routing provisions across **C1, C2, and C3** aircraft zones, ensuring alignment with scan-based structural geometry and installation constraints.
- Developed **200+ routing provision assemblies** to support electrical harness routing paths and maintain configuration-accurate digital twin integrity.

Electrical Harness Routing

- Performed electrical harness routing using CATIA Electrical Harness Installation workbench, ensuring **compliance** with bend radius, diameter constraints, routing continuity, and installation feasibility.
- Collaborated** with equipment modeling and routing provision teams to maintain **system-level integration** and configuration accuracy within the aircraft digital twin.

Reverse Engineering & Digital Twin Development

- Reconstructed as-built aircraft geometry from scan data using **CATIA Wireframe** and **Generative Shape Design (GSD)** tools to create accurate surface models.
- Preparing to perform **deviation analysis** to validate as-built versus as-designed configurations and support engineering change validation activities.

Wichita State University, Wichita, KS

CAD Modeling and 3D Printing Support Assistant (WSU Library)

Sep 2024 – June 2025

- Created **3D CAD** models for student projects based on design ideas and reference inputs provided by students.
- Modified and finalized models in **AutoCAD** to ensure they are suitable for 3D printing.
- Prepared **CAD files** for printing by checking dimensions, scale, and basic geometry quality.
- Printed physical models using **MakerBot 3D printers** to support student academic and project work.
- Assisted students by reviewing models and suggesting simple **design improvements** before printing.

Professional Training

- Digital Twins - Udemy

Skills

Digital Twin & Reverse Engineering: Scan-to-CAD Modeling (As-Built Aircraft Data, As-Built vs As-Designed Modeling & Analysis, Surface Reconstruction & Geometry Validation).

Electrical Systems Integration: Electrical Equipment Modeling & Electrification, Electrical Harness Routing, Routing Provision Assembly Creation & Placement, Logical to Physical Synchronization.

CAD & Design Tools: CATIA & 3DEXPERIENCE, Part Design, Assembly Design, Generative Shape Design (GSD), Wireframe and Surfaces, Electrical Harness, Electrical Logical to Physical Design, Drafting(basic), AutoCAD.