

ENGR. MUHAMMAD OSAMA

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SUMMARY

Experienced Mechanical Engineer in full product development lifecycle, from prototype to production, including design, modeling, and documentation. Proficient in multiple CAD software for part and assembly design, with expertise in DFMA and 3D printing. Skilled in generating BOMs and technical documentation, collaborating effectively with cross-functional teams. Proven ability to deliver successful project outcomes through detailed planning and specifications.

TECHNICAL SKILLS:

MS-Office, Basic C++, Basic Python, PTC Creo, SolidWorks, Onshape, Siemens NX, Basic Windchill, Basic AutoCAD, Manufacturable 2D Drawings, Basic Finite Element Analysis (FEA), Basic Computational Fluid Dynamics (CFD), Design For Manufacturing and Assembly (DFMA), 3D Printing, Rapid Prototyping, Problem-Solving and Documentation.

PROFESSIONAL EXPERIENCE

WOOT TECH AEROSPACE

Design Engineer (R & D Department)

KARACHI, PAKISTAN

(2 Years) *Aug 2022 – Sep 2024*

- Experienced in Product Development from prototype to production phase.
- Designed and modelled manufacturable parts on SolidWorks.
- Experienced in the handling, planning and integration of large assemblies through SolidWorks.
- Developed scaled and production-ready part and assembly drawings, including parts list generation.
- Engineered Bills of Materials (BOMs), models, and detailed technical documents for systems and subassemblies.
- Utilized basic PTC Windchill for CAD task management.
- Precisely conducted calculations, planning, and specifications for successful project outcomes.
- Demonstrated expertise in Design for Manufacturing and Assembly (DFMA) and 3D printing methods.
- Drafted and maintained accurate technical specification reports and project documentation.
- Maintained accurate technical specification reports and project documentation.
- Collaborated with cross-functional teams, including electrical engineers and software developers for product development.

PROJECTS:

- **Modelled Loiter Munitions and VTOL Drones:** Designed, drafted CAD including installation planning of components, and fabricated drones specialized for VTOL or loitering munitions operations.
- **Copter Assembly Design:** Initiated and extensively worked on designing, drafting and handling CAD assemblies of copters including manufacturable parts and components installation planning for fabrication.
- **Ground Control Station (GCS):** Engineered, developed part lists and installation planning of electrical components for GCS.
- **Fixed-Wing Drone Assembly:** Developed model, drawings, planning on CAD and handled large assemblies, ensuring structural integrity and performance.
- **Payload Mechanism Attachments:** Created CAD and refined mechanism attachments for various payloads, enhancing operational capabilities.
- **Pneumatic UAV Launcher:** Modelled CAD on PTC Creo and conducted FEA on launcher to select materials and ensure optimal design performance, also doing vibrational analysis for the selection of shock absorbers using code on MATLAB and authored, managed technical reports and documentation.

PAKISTAN INTERNATIONAL AIRLINES

Internship

KARACHI, PAKISTAN

Sep 2021 – Oct 2021

- Familiarized with “Line Maintenance” and “Base Maintenance” fundamentals.
- Obtained fundamental knowledge of Non-Destructive Testing (NDT) testing.

KIA MOTORS

Internship

KARACHI, PAKISTAN

Feb 2021 – Mar 2021

- Formulated A3 problem-solving report to streamline the production process of Chassis station in the assembly plant.
- Presented several strategies to the Head of Assembly and Managing Director to optimize the Chassis Station production process and address bottlenecks in the assembly plant.
- Compiled comprehensive “Manifest” and “Keypoints” documentation for production of Sorento, Sportage, and Picanto models.

KARACHI SHIPYARD AND ENGINEERING WORKS

KARACHI, PAKISTAN

Internship

01 Oct – Oct 2020

- Pro-actively learned about the working of CNC laser machine, CNC Router, CNC Lathe.
- Acquired experience in reading and comprehending 2D drawings for repair purposes.
- Gained practical insights into the working of lathe, drilling, and hydraulic press; supported safety precautions during operations.

EDUCATION & OTHER

Masters of Science in Power Engineering

(Oct 2024 – Present)

Brandenburgische Technische Universität, Cottbus, Germany.

Bachelors of Engineering in Mechanical

(Sep 2022)

DHA Suffa University, Karachi, Pakistan.

- **Major Courses:** Machine Design and CAD I & II, Manufacturing Process, Engineering Drawings, Thermodynamics, Heat and Mass Transfer, Power Plant, Mechanical Vibrations, Mechanics of Materials, ME Design Project, and Project Management.

Erasmus+ Youth Exchange Certification - (Responsible TikTok and Instagram Use)

- Developed tolerance to combat online bullying.
- Raised awareness about online harassment by giving presentations.
- Acquired expertise in photography and film production for educational purposes.

LANGUAGES:

English -	C1
German -	B1
Urdu -	Native