

Curriculum Vitae

Education

2024 – 2026

Technische Universität Chemnitz, Chemnitz

Advanced Manufacturing M. Sc.

2018 – 2023

SEGi University & UCLAN (Dual-Award), Malaysia

Mechanical Engineering B. Eng.



Professional Experience

08.2025 – 05.2026

Fraunhofer IWU, Chemnitz

Master's Thesis

- Designed and programmed optical sensor systems for reliable workpiece recognition in CNC/NC automation
- Developed and evaluated algorithms to determine workpiece position and orientation for NC machine control
- Integrated sensor, recognition and position data into automated workflows for setup-free manufacturing

04.2025 - 07.2025

Mechanical Design Intern

- Designed a robot-assisted gripper, including 3D CAD models of the gripper and its installation environment
- Selected and sized pneumatic actuators through research, data analysis and supplier coordination
- Created standards-compliant technical drawings and documentation; supported assembly, commissioning and dismantling

10.2024 - 03.2025

Working Student

- Conducted technical research and developed concepts for mechanical and robotic solutions in assembly and automation projects
- Selected technical products and developed solutions for project-specific requirements
- Created 3D CAD models and 2D drawings in CATIA V5 and Autodesk Inventor for concepts and experimental setups
- Supported the construction, assembly and dismantling of experimental setups and demonstrators

07.2025 – 05.2026

Kreativzentrum, Chemnitz

Student Assistant

- Delivered and supported German-language STEM classes for school pupils and adults
- Developed and conducted age-appropriate experiments
- Prepared teaching concepts, information materials and supporting documentation
- Explained complex scientific topics through everyday examples for different age groups

06.2024 – 06.2025

Sauer Automation Sachsen, Chemnitz

Mechanical Design Engineer

- Designed and optimised crane-system components and assemblies, focusing on precision and manufacturability
- Contributed to projects from concept development through manufacturing and on-site customer assembly
- Supported 3D printing to produce prototypes and functional samples
- Created 3D CAD models and standards-compliant 2D manufacturing drawings and supported production
- Designed and detailed complete prototypes and large assemblies, including geometric adaptations

10.2022 – 01.2023

UPWORK, Remote

Mechanical Design Engineer

- Created 3D CAD models and 2D drawings in SolidWorks and AutoCAD
- Analysed technical design specifications and translated them into production-ready designs

Skills and Languages

Technical Skills

- **CAD and 3D Design**
 - Autodesk Inventor | CATIA V5
 - SolidWorks | Siemens NX
 - Fusion 360 | AutoCAD
 - 3D CAD modelling
 - 2D technical drawings
 - Technical documentation
- **Design and Product Development**
 - Component and assembly design
 - Design for manufacture
 - Prototyping and 3D printing
 - Production support
- **Automation and Robotics**
 - CNC/NC automation
 - Optical sensing and recognition
 - Robot-assisted gripper systems
- **Manufacturing and Project Delivery**
 - Assembly and commissioning
 - Experimental setups and dismantling
 - Supplier coordination

Communication and Languages

- **Communication and Documentation**
 - Technical documentation
 - Technical reports
 - Presentations
 - Scientific writing
 - Technical advice
- **Teaching and Training**
 - Lesson planning
 - Training
 - STEM education
- **Languages**
 - Arabic (native)
 - German (fluent, C1)
 - English (fluent, C2)

Chemnitz, 01. July 2026



Ahmed Said Mahmoud