

Tolga KARATAŞ

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SUMMARY

Mechanical Engineering student focused on welding engineering (IWE pathway) and advanced manufacturing. Strong interest in armor steels, welding metallurgy, and production systems. Hands-on exposure to manufacturing environments and ongoing research on micro-crack formation in welded high-hardness steels.

EDUCATION

Çankaya University 2023 – Present
B.Sc. in Mechanical Engineering (3rd Year) Ankara, Turkey
Relevant Coursework: Welding Technology, NDT, Finite Element Analysis, Heat Treatment, Manufacturing Processes

TECHNICAL SKILLS

CAD & Design: SolidWorks, CATIA, Siemens NX
Analysis & Computing: ANSYS, MATLAB, Python
Manufacturing: Welding Fundamentals (MIG/MAG, HAZ basics), CNC Manufacturing Basics, Metal Fabrication
Engineering: Technical Drawing Interpretation (GD&T familiarity), Production Planning, Shop-floor Workflow Understanding

EXPERIENCE

FNSS Defence Systems Aug 2025 – Sep 2025
Manufacturing Engineering Intern

- Observed welding, metal fabrication, and assembly workflows in a defense manufacturing environment.
- Assisted in interpreting technical drawings and following production steps such as material preparation, fit-up, and quality checkpoints.
- Gained exposure to CNC machining and fabrication processes used in armored vehicle manufacturing.
- Developed familiarity with production flow, shop-floor practices, and manufacturing standards in the defense industry.

PROJECTS

Micro-Crack Analysis in MIG/MAG Welded Armor Steels (TÜBİTAK 2209-A) Ongoing

- Investigating heat input effects and micro-crack formation mechanisms in high-hardness armor steels.
- Analyzing welding parameters and their influence on HAZ behavior and material integrity.

Liquid Propellant Rocket Engine Project (Race2Space)

- Contributing to the design and manufacturing processes of a student-developed liquid rocket engine.
- Involved in material selection, fabrication methods, and system integration.

CERTIFICATIONS

- Georgia Institute of Technology – Material Behavior, Material Processing, Engineering Systems
- Stanford University – Machine Learning, Mathematical Thinking
- Autodesk – Fusion 360 for Mechanical Design
- IBM – Machine Learning with Python
- University of Michigan – Introduction to Thermodynamics
- Vanderbilt University – Introduction to Programming with MATLAB
- ISAE-SUPAERO – Fundamentals of Flight Mechanics

LANGUAGES

English (Fluent), Turkish (Native), French (Beginner)