

BEGUM UDUM

Mechanical Engineering Graduate

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Personal Profile

Mechanical Engineering graduate (2:1 Hons, UWE Bristol) with hands on FEA, CAD and composite testing experience gained through a dissertation on explicit finite element crash simulation and three years in Formula Student vehicle design. Skilled in Solidworks, ANSYS and ABAQUS for design validation from concept through to physical test correlation.

Technical Skills

SolidWorks (Certified), ANSYS, ABAQUS, MATLAB, CATIA, Rhino 8, AutoCAD, FEA simulation, CFD, materials testing, data analysis and post- processing

Education

BEng Honours Mechanical Engineering — 2:1.

Sept 2023 – June 2026

University of the West of England, UWE Bristol

Dissertation: Explicit Finite Element Modelling and Validation of an Aluminium Honeycomb Impact Attenuator for Formula Student Safety Assessment. Validated attenuator design against physical FS test results, G deceleration criteria using explicit dynamic FEA, correlating simulation results to physical test data.

Key Modules: Dynamics Modelling & Simulation (1st Place), CAD/CAM, Materials & Structures, Advanced Thermofluids, Composite Engineering

A Levels: Maths, Chemistry, Physics

Experience

UWE Formula Student — Driver Systems Team Member

Oct 2023 – June 2026

- Designed and optimised driver interface components integrating braking and steering systems within the chassis, reducing assembly time and weight.
- Collaborated with aerodynamics, powertrain, and chassis sub-teams to align structural performance with safety compliance across multiple design iterations.

Undergraduate Research Intern — METU Mechanical Engineering Dept, Turkey.

Aug 2024

- Developed a CAD based peel-off fixture to enhance adhesion testing accuracy for different metal components.
- Validated fixture performance against ASTM, reducing test setup time.

Undergraduate Research Intern — Centre for Solar Energy Research & Applications, Turkey

Jul 2021

- Participated in the construction and characterisation of organic solar cells under the TÜBİTAK research project.
- Supported literature research on organic solar cells for Dr. Gönül Hızalan's laboratory at METU.

Engineering Intern — KIER Construction, Bristol, UK

Jul 2022

- Supported structural design of a simulated Concorde hangar, evaluating load distribution across structure and selecting materials.
- Assisted with site inspections and technical workshops, gaining practical insight into engineering project delivery.

Languages

English & Turkish (Native) | French (Intermediate) | German (Basic)

Awards & Leadership

- 1st Place — Dynamics Modelling & Simulation Project, UWE Engineering Dept (2024)
- Winner — National French & Arts Competition
- Team Member — UWE Bristol Formula Student Team
- Leadership & Community Service Award — Model United Nations