MUSTAFA FURKAN ÖZEL

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PROFESSIONAL SUMMARY

Highly motivated Mechanical Engineer with a Master of Science degree and a strong background in computational mechanics, finite element analysis (FEA), and Python-based structural optimization. Proven track record in bridging theoretical structural modeling with practical R&D solutions within the renewable energy and manufacturing sectors. Co-author of a published book chapter on structural buckling. Eager to leverage advanced computational methodologies and algorithmic problem-solving skills to contribute to multiscale and multiphysics research within the Mechanical Engineering Ph.D. program at Bilkent University.

EDUCATION

Master of Science in Mechanical Engineering | OSTİM Technical University, Ankara, Türkiye
September 2022 - September 2025 | GPA: 3.07/4.00

- **Thesis:** *"Prevention of Shear Buckling in Thin-Walled Closed-Section Beams: Insights from Python-Based Structural Analysis"*
- **Advisor:** Assoc. Prof. Dr. Hande Girard
- **Focus Areas:** Computational Solid Mechanics, Finite Element Analysis, Advanced Machine Vibrations, Engineering Fracture Mechanics.

Bachelor of Science in Mechanical Engineering | Selçuk University, Konya, Türkiye
August 2016 - July 2021 | GPA: 3.11/4.00

- **Honors:** Graduation Honor Student; Honor Student (Spring 2020-2021).

Bachelor's Degree in Business Administration | Anadolu University, Eskişehir, Türkiye
October 2017 - June 2021 | GPA: 2.89/4.00

- **Honors:** High Honor Certificate (Spring 2020-2021); Honor Certificate (Fall 2019-2020).
- **Relevance:** Provided a strong foundation in project management, systemic efficiency, and R&D coordination.

ACADEMIC PUBLICATIONS & RESEARCH

- **Özel, M. F.**, & Girard, H. (2025). *"Shear Buckling in Thin-Walled Structures: Insights from Python for Structural Analysis."* Published in *Advances in Aerospace Engineering*, CRC Press / Taylor & Francis Group, pp. 35-46.
- **Master's Research Focus:** Developed Python-based algorithms integrated with traditional finite element frameworks to evaluate and optimize the complex shear buckling phenomena inherent in thin-walled structures, applicable to aerospace and advanced manufacturing.

CORE TECHNICAL COMPETENCIES

- **Computational Mechanics:** Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD), Structural Dynamics, Multiscale Modeling, Fracture Mechanics.
- **Engineering Software:** ANSYS (Mechanical & Fluent), Autodesk Fusion 360, SolidWorks, AutoCAD, MATLAB.
- **Programming & Algorithms:** Python (specifically for structural analysis and FEA scripting/automation).
- **R&D & Engineering Design:** Prototyping, Thermo-fluid Dynamics, Structural Optimization under Dynamic Loads (Wind/Snow), Technical Documentation & TÜBİTAK Project Coordination.

PROFESSIONAL RESEARCH & ENGINEERING EXPERIENCE

Sales Engineer (Technical Consultant) | Akifsan Makina, Ankara, Türkiye
February 2024 - September 2025

- Provided expert technical consultation to industrial clients regarding advanced machining, cutting tools, and industrial equipment.
- Analyzed complex client requirements and manufacturing constraints to recommend optimal technical specifications and repair equipment.
- Prepared and managed detailed technical catalogues and product engineering documentation.

R&D and Project Coordinator | Fixus Solar Mounting Systems, Ankara, Türkiye
May 2023 - February 2024

- Led R&D initiatives focusing on the structural optimization of solar mounting systems against dynamic environmental loads (wind and snow).
- Performed rigorous structural calculations, analytical assessments, and technical reporting to ensure compliance with international engineering standards.
- Developed novel design solutions that significantly improved structural integrity while achieving substantial cost reductions in manufacturing.

Design and Analysis Engineer | Theta Clean Energy Technologies, Ankara, Türkiye
January 2022 - November 2022

- Executed complex Computational Fluid Dynamics (CFD) and structural analyses using ANSYS Fluent and Mechanical for TÜBİTAK-supported clean energy projects.
- Translated theoretical mathematical models into functional 3D designs and physical prototypes.
- Applied predictive algorithmic criteria to optimize structural performance, significantly reducing assembly labor requirements and improving system efficiency.

CERTIFICATIONS & ACADEMIC ACHIEVEMENTS

Advanced Technical Training:

- ANSYS Fluent - CFD Analysis Engineer Training (Udemy - Engineering Academy, 2022)
- Fusion 360 Design, Manufacturing and Generative Design (Udemy - Penta Teknoloji, 2022)
- Multi-Body Dynamics: Theory and Application (Udemy - Ahmet Okudan, 2021)
- TEI Aviation Engines School (TEI Employees and Instructors, 2021)
- Parametric Design with SolidWorks and ANSYS (Udemy, 2020)
- ANSYS Mechanical Introduction (Udemy, 2020)

Language Skills:

- **Turkish:** Native
- **English:** Professional working proficiency (Selçuk University Foreign Language Preparatory Program Certificate, Level B1 - Active use in academic research, software documentation, and international publications).

ACADEMIC REFERENCES

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(Additional references available upon request)