DERSU ÇELİKSÖZ

Senior Controls Design Engineer

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PROFESSIONAL SUMMARY

Senior Controls Design Engineer specializing in hybrid electric vehicle control, real-time simulation, and HIL validation for defense/automotive applications. Strong expertise in model-based control design, hybrid electric system architecture, and rapid control prototyping/testing.

WORK EXPERIENCE

Senior Controls Design Engineer

FNSS Defense Systems Inc., Ankara, Turkey **09.2021 – 05.2026**

- Architected model-based control systems for hybrid electric tracked vehicles, including motion control and power management using MATLAB/Simulink
- Developed vehicle and fault management state machines, and designed CAN-based communication architectures for system-level control and diagnostics
- Modeled hybrid powertrain and full-vehicle dynamics for control-oriented simulation and design decisions
- Developed real-time driver-in-the-loop simulators and accelerated HIL simulations using data-driven reduced-order models, achieving up to ~100x speed-up in nonlinear subsystems
- Designed and executed MIL, SIL, and HIL validation workflows to ensure system safety and reliability
- Performed rapid control prototyping using NI VeriStand/LabVIEW and code generation via Simulink Coder
- Contributed to driveline architecture development for electrified tracked vehicle platforms

Undergraduate Engineer

STM Defense Technologies and Engineering Inc., Ankara, Turkey **10.2020 – 09.2021**

- Designed and integrated UAV gimbal systems combining electromechanical design and control systems
- Modeled and optimized vibration isolation systems to improve stability of UAV subsystems

EDUCATION

Master of Science | Mechanical Engineering — CGPA: 3.64 / 4.00

Middle East Technical University (METU), Ankara, Turkey **02.2022 – 01.2025**

Curriculum focused on dynamics and control; thesis on nonlinear gear dynamics

Bachelor of Science | Mechanical Engineering — CGPA: 3.77 / 4.00

Middle East Technical University (METU), Ankara, Turkey **08.2016 – 07.2021**

SKILLS

- **Control algorithm development:** MATLAB, Simulink, Stateflow
- **Modeling & real-time simulation:** Simulink, Simscape (Mechanical/Electrical/Multibody)
- **Embedded code generation:** Simulink Coder, Embedded Coder
- **Rapid control prototyping & hardware-in-the-loop (HIL) testing:** NI VeriStand
- **Test and measurement system development:** NI LabVIEW, LabVIEW FPGA
- **Mechanical design (CAD):** CATIA, SolidWorks
- **Programming:** Python, C, MATLAB
- **Version control & management:** TortoiseSVN, JIRA

PUBLICATIONS AND PATENTS

- **Forced Response of Nonlinear Systems Under Multi-Frequency Excitations by Using Harmonic Balance Method.** *Nonlinear Structures & Systems, Vol. 1: Proceedings of the 42nd IMAC,* USA, 2025
- **Design and Verification of an Adaptive State-Tuned Power Management System for Series Hybrid Electric Tracked Vehicles.** *International Symposium on Advanced Vehicle Control,* Italy, 2024
- **Series-Hybrid Powertrains: Advancing Mobility Control in Electric Tracked Vehicle Technology.** *World Electric Vehicle Journal,* 2024
- **Adaptive Power Management System for Armored Series Hybrid Vehicles.** WO2024226022A1, 2024

LANGUAGES

Turkish (Native) English (Advanced) German (Basic)

ADDITIONAL INFORMATION

- **Interests:** Water Polo and Swimming (Professional), Gastronomy, Motorsports, Skiing
- **References:** Available upon request
- **Driving License:** Class B
- **Military:** Completed