

Eren BARIN

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Bursa / Nilufer Turkiye



ABOUT ME

Automotive Engineer specializing in thermal systems engineering and simulation. Experienced in managing the entire lifecycle of engine, battery, fuel cell cooling loops, and cabin HVAC systems from concept to vehicle integration. Pioneered 1D thermal simulation capabilities at Karsan R&D, validating models with real vehicle data to reduce prototype dependency and accelerate development. Proven track record in cost reduction, including a €350/vehicle saving through successful component integration. Motivated by a data-driven approach to problem solving and delivering measurable value.

EDUCATION

2022 - 2026 **Bursa Uludag University - Faculty of Engineering**, Automotive Engineering (GPA: 3.08 / 4.00)

EXPERIENCE

Karsan Automotive

Thermal Systems Engineering Intern

October 2025 – August 2026

- Pioneered 1D thermal simulation capabilities from scratch within the company, conducting validated analyses on over 15 cooling and heating loops across 6 distinct vehicle platforms.
- Developed 1D simulation models for the powertrain and power electronics cooling circuits of ATA and ATA-12M electric vehicles using MATLAB Simulink/Simscape, validating them against real-world flowmeter and CAN data to analyze the impact of vehicle speed on thermal and flow behavior.
- Modeled High-Temperature and Low-Temperature cooling loops for ATA-12M hydrogen vehicles, ensuring the successful thermal integration of the fuel cell unit.
- Validated 1D battery cooling line analyses for ATA and ATA-12M vehicles, enabling new layouts to be deployed without physical prototypes and accelerating the diagnosis of field failures through simulation.
- Managed the end-to-end integration of a new High-Voltage Heater unit for JEST vehicles from heating loop design and supplier coordination to electrical integration and quality documentation (DFMEA/FMEA/FTA/PDB), delivering a cost reduction of up to €350 per vehicle.
- Drove the design, commissioning, supplier alignment, and on-vehicle validation of cooling systems for autonomous computers and LiDAR sensors on ATA and JEST autonomous vehicle platforms.
- Executed CFD analyses and geometric optimizations for ATA vehicle cabin climate air ducts, while performing flow simulations for all junction components to standardize and error-proof internal design workflows.
- Performed exergy analyses on plate-heat-exchanger HVAC systems using R1234yf refrigerant, comparing them with conventional finned models to establish a technical baseline for next-generation refrigerant integration and efficiency.
- Actively contributed to the pre-launch deployment of heat pump HVAC and frontbox units for a new vehicle platform, completing gas/drainage line layouts, component-to-body connections, BOM creation, and quality documentation.

Rownd Precision Industry

Volunteer Engineering Intern

January 2025 – June 2025

- Gained hands-on operational experience on the production floor, including the installation, setup, and zeroing operations of CNC machinery.

Otonom Arac Gelistirme Grubu (OTAGG)

Team Captain (TEKNOFEST)

February 2025 – October 2025

- Led the 80-member OTAGG team to the finals of the TEKNOFEST Autonomous Robotaxi Competition.
- Secured 1st place in Turkey among 568 teams in the simulation report stage.
- Coordinated mechanical, software, and electronics sub-teams to ensure full vehicle integration.
- Managed the preparation and timely submission of all required technical reports and documentation.
- Represented the team as the primary contact for competition organizers, sponsors, and stakeholders.

Mechanical Team Leader

October 2024 – October 2025

- Managed a 30-member mechanical team and structured sub-departments to improve coordination and efficiency.
- Designed technical training for members and secured sponsorships to meet resource and equipment needs.
- Directed project timelines to ensure all engineering tasks were completed on time and up to specifications.
- Oversaw external shell updates for OTAGG-01, alongside key revisions in steering, motor, and powertrain systems.
- Led the ground-up design and development of the next-generation OTAGG-02 vehicle.

Mechanical Team Member

May 2024 – October 2024

- Participated in the manufacturing of OTAGG-01, improving the assembly process with advice on component positioning and welding.
- Used SolidWorks to create technical drawings and developed the 3D virtual model of the vehicle.
- Contributed to decision-making in meetings and supported the technical reports required for the competition application.

Uludag Racing Formula SAE Team

High Voltage Team Member

October 2022 – October 2024

- Researched electric motor and powertrain options, identifying cost-effective technical solutions compliant with FSAE regulations.
- Designed various vehicle components, including the battery enclosure, using SolidWorks in compliance with competition rule requirements.

LANGUAGE

- Turkish - Native
- English - B2

SKILLS

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|--------------|-------------|
| • CATIA | • MATLAB |
| • NX | • Simulink |
| • SOLIDWORKS | • ANSYS |
| • MS Office | • HyperMesh |
| • SolidCAM | • GT-SUITE |
| • CANalyzer | • KULI |
| • CANoe | • Amesim |