JALIL JALILOV

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EDUCATION

Johns Hopkins University (JHU) Baltimore, MD
B.S. Electrical & Computer Engineering 2024–2028
Relevant Coursework: Renewable Energy Engineering, Environmental Engineering, Signals and Systems, Digital Systems, Electrical and Computer Engineering
Activities: Hopkins Student Wind Energy Team (Electronics & Controls), JHU Consulting Club, Azerbaijani Student Association (Co-Founder), Hopkins Racing Club, BAJA SAE

Landau School Baku, Azerbaijan
High School, Graduated with Distinguished Diploma via State Examinations, A-levels, and IGCSE 2018–2024

WORK EXPERIENCE

Technology Consulting Intern Ernst & Young (EY), Baku, Azerbaijan
Jul–Aug 2025

- Built Python/SQL to Power BI pipelines integrating SCADA, CMMS, and ERP systems to model asset hierarchies and failure propagation for business continuity analysis.
- Developed plant-level incident and recovery playbooks aligned with NERC CIP and IEC 62443 standards.
- Implemented telemetry health monitoring (latency, job success, data freshness) and operational SLAs for infrastructure risk mitigation.

Electrical Engineering Intern Shahdeniz Platform, Baku, Azerbaijan
Dec 2022–Jan 2023

- Analyzed offshore LV/MV power distribution systems including motor control centers, breaker coordination, and load balancing.
- Reviewed hazardous-area (Ex) installations under IEC 60079 compliance standards.
- Investigated trip events, voltage deviations, and alarm logs; recommended corrective testing and mitigation protocols.

Electrical Process Intern SOCAR Refinery, Baku, Azerbaijan
May–Aug 2023

- Supported refinery electrical distribution and instrumentation systems across process units.
- Validated mass-energy balances and monitored electrical loads for operational efficiency and reporting compliance.
- Verified calibration of transmitters, protective relays, and utility monitoring systems prior to turnaround operations.

Software Engineering Intern Azercell Telecom, Baku, Azerbaijan
Jun–Aug 2022

- Developed SQL-based ETL pipelines processing telecom network telemetry and alarm streams.
- Implemented data-quality validation (deduplication, anomaly detection, null analysis).
- Optimized backend performance for infrastructure monitoring dashboards.

RESEARCH & PROJECTS

Leading Electrical Engineer — AV Technologies (JHU Startup) Baltimore, MD
2026–Present

- Working on electrical design for a 1–1.25 kW vortex-induced vibrational wind energy harvester optimized for low-speed urban wind with a team of 4 people.
- Designing electromagnetic conversion architecture using precision-tuned oscillating coils.
- Developing power electronics and IoT monitoring systems for rooftop deployment.
- Conducting ANSYS and analytical simulations validating mechanical-to-electrical energy conversion efficiency.

Undergraduate Research Assistant — ROSEI Lab Johns Hopkins University
2025–Present

- Working under Prof. Dvorkyn with a PhD team, constructing generator, transformer, and transmission datasets for AC/DC power flow and optimal power flow modeling.
- Performing N-1 contingency screening and PTDF/LODF sensitivity analysis for grid reliability research.

Founder — Eco2Auto (UN Member Organization) 2023–Present

- Built a 40,000+ vehicle CO_2 emissions database integrating all existing car models and emission-factor modeling.
- Presented sustainability analytics framework during UNGA 78; participated in UN sessions in New York and Geneva alongside global leaders.
- Having access to locations of charging stations across the world, Eco2Auto framework was presented to UN Secretary-General António Guterres, and in UN sessions in Geneva and New York .

PUBLICATIONS

Rheophysical Characteristics of Water Flow in Microcracks
Experimental investigation of non-Newtonian microscale flow using the Bingham model; estimated rheological parameters under varying micro-slit clearances with implications for microfluidic systems and confined transport phenomena.

Geothermal Energy as the Most Stable Renewable Energy
Published a thesis with Rauf Nadirov, and presented in 4th International Research Conference where we received the Distinguished Award. Comparative analysis of geothermal base-load stability and grid-integration advantages.

AWARDS

Vanda International Olympiad (Country Rank #1) — STEM Olympiad (Silver) — Distinguished Research Award — Landau School Piano Competition (1st Place)

LANGUAGES

Azerbaijani (Native), Russian (Fluent), English (Fluent), Turkish (Fluent), German (Intermediate)

TECHNICAL SKILLS

Python, SQL, MATLAB, LTspice, Power BI, SolidWorks, Fusion 360, PCB Design, Power Electronics, Control Systems, SCADA, CMMS, ERP, IoT Systems