

Mashalakh Mamedov

Mechatronics Engineering MSc Student | MATLAB and Simulink Modelling, Simulation and Validation

Rome, Italy | Open to relocation across Europe | mashalakh.mamedov1@gmail.com

+39 344 781 6935 | [linkedin.com/in/mashalakh](https://www.linkedin.com/in/mashalakh) | [mashalakhmamedov.github.io](https://github.com/mashalakhmamedov)

■ PROFESSIONAL SUMMARY

Mechatronics Engineering MSc student at Tor Vergata, with a BSc in Electrical and Electronics Engineering and two years nine months of on site industrial experience. Project work in power electronics, computer vision and robotics, modelled and validated in MATLAB and Simulink.

■ SELECTED PROJECTS

3 kVA Single Phase H Bridge Inverter

A.Y. 2025/26

MSc Power Electronics and Electrical Drives, Tor Vergata | Individual project, simulation based

- Designed and simulated a 3 kVA single phase H bridge inverter, 400 V DC to 230 V RMS with unipolar SPWM, as a parameterised MATLAB and Simulink model in Simscape Electrical, reaching 1.64% output voltage THD at full load against a below 3% requirement across a five case load matrix.
- Diagnosed an LC resonance under inductive loading and cut THD from 3.64% to 2.33% with a 5 ohm damping resistor, reporting its cost: unity power factor THD rose from 0.72% to 1.64%.

Fire and Smoke Semantic Segmentation

Jun to Jul 2026

MSc Computer Vision, Tor Vergata | Two person project, owned the deep learning workstream

- Owned the deep learning workstream end to end in MATLAB, from the COCO to mask dataset pipeline to evaluation, training a DeepLabv3+ network on a ResNet 18 backbone with inverse frequency class weighting, reaching a mean test F measure of 0.8507 against 0.4421 for a classical baseline.
- Traced a NaN mean F measure to a label fault: an image with visible fire but an empty reference mask, worth about 4.48 percentage points of the test mean.

RoboLatte, UR5e Robot Mechanics Project

Jan 2026

MSc Robot Mechanics, Tor Vergata | Two person project

- Led the Autodesk Inventor workstream: UR5e assembly, imposed joint motions, Dynamic Simulation setup and driving force extraction.
- Compared sampled joint torques across both toolchains: five of six matched in sign and order of magnitude and Joint 3 did not, so it was reported as a screening comparison.

Remotely Controlled Robotic Manipulator

2023

BSc Senior Design, Tbilisi State University | Four person team

- Contributed to a four person team that integrated a commercial 4 axis arm onto a DIY 4WD platform, with Arduino control in C++ and an NRF24L01 2.4 GHz link.

■ TECHNICAL SKILLS

Modelling and Simulation: MATLAB, Simulink, Simscape Electrical Specialized Power Systems, Autodesk Inventor

Power Electronics: H bridge inverters, unipolar SPWM, LC filter design and damping, FFT and THD analysis

Computer Vision: Semantic segmentation, DeepLabv3+, ResNet 18, transfer learning, COCO datasets, 2D and 3D annotation

Robotics and Embedded: Kinematics, Denavit Hartenberg modelling, trajectory planning, Arduino and C++

■ ENGINEERING EXPERIENCE

Data Annotation Specialist, ALLSTARSIT

Jun 2024 to Oct 2024

Tbilisi, Georgia

- Annotated 2D and 3D autonomous driving imagery for vehicles, pedestrians, traffic lights and road markings in a proprietary Linux based tool, to predefined policies under QA and team lead review.

Warehouse Data Entry Clerk, Bechtel Enka Joint Venture

Jul 2017 to Oct 2018

Gardabani, Georgia | South Caucasus Pipeline Expansion

- Kept materials and component records for an active gas pipeline expansion project.
- Coordinated materials through a BP shutdown, working to a Bechtel representative on site.

Mechanical Installation Support Technician and Interpreter, Bechtel Enka Joint Venture

Feb 2016 to Jul 2017

Gardabani, Georgia | South Caucasus Pipeline Expansion

- Interpreted between international vendor teams, including Siemens, Solar Turbines and Ingersoll Rand, and ENKA teams on site.
- Followed technical drawings and schematics closely enough to convey vendor explanations accurately, without holding drawing responsibility.
- Assisted with hands on mechanical installation work such as bolting.

■ EDUCATION

MSc, Mechatronics Engineering

Sep 2024 to expected 2027

University of Rome Tor Vergata, Rome, Italy | Taught in English

BSc, Electrical and Electronics Engineering

Awarded Jul 2023

Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia

■ LANGUAGES

Turkish: Native | **Azerbaijani:** Native | **English:** C1 working proficiency, EF SET 74/100 | **Georgian:** B2 | **Russian:** B1 | **Italian:** Basic

■ ADDITIONAL EXPERIENCE

iGaming Customer Support Specialist, RISK, Remote and Rome, Italy, May 2025 to present | **Customer Service Specialist**, Majorel, Tbilisi, Georgia, Feb 2022 to Jun 2024