Teodor-Florin Vătăjița

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Profiles

LinkedIn

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GitHub

Natz23123

Skills

Programming Languages

Python, Java, C/C++, JavaScript, HTML, SQL, Shell Scripting

Networking & Systems

Linux (Arch/Debian), Docker, WireGuard, SSH, Samba, Virtualization, High Availability

Tools & Platforms

OpenCV, PyTorch, MediaPipe, Raspberry Pi, Git, Apache POI, Nginx, Flask, NumPy, Django

Embedded Systems

STM32, Arduino, ESP32, I2C, CMake

Education

Transilvania University of Brașov — Bachelor of Engineering

Information Technology / Electrical Engineering and Computer Science — Brașov • 2024 – 2028

Ferdinand I National College — High School Diploma

Mathematics and Computer Science — 2020 – 2024

Awards

2nd Place @ Code the Future Hackathon — April 2026

SIEMENS

Co-developed "RoomSense" a digital twin solution for environmental optimization. Architected a distributed IoT system using ESP32-C6 and Raspberry Pi 5, complemented by a Python-based thermal analytics dashboard for real-time health insights.

3rd Place @ EduTech Hackathon — November 2024

EduTech

Secured 3rd place among 18 teams for 'Foodly,' an AI-driven initiative targeting food waste. Contributed the core computer vision module, utilizing Python and OpenCV for automated ingredient recognition in real-time video.

Experience

IBM — Brasov

Infrastructure Intern — July 2026 – August 2026

- Designed and deployed a high-availability web endpoint across 4 virtual machines: two redundant web servers serving the same page behind two HAProxy load-balancing nodes
- Configured HAProxy and Keepalived for traffic distribution and automatic failover (virtual IP)
- Validated resilience by shutting down nodes and confirming the page stayed available

Projects

Hybrid Cloud Infrastructure & Secure Remote Management 2025 – Present

- Architected a private mesh network using WireGuard to interconnect a home server, Raspberry Pi, and mobile devices through an Oracle Cloud VPS hub for seamless, encrypted remote access.
- Leveraged an Oracle VPS as a central gateway, allowing secure entry into the home network from any location without traditional port forwarding or exposing hardware to the public internet.
- Implemented an energy-efficient remote orchestration layer by deploying a Raspberry Pi as a dedicated jump host; leveraged signal-based booting to minimize idle power consumption without compromising system availability.

Hand Sign Letter Recognition Software December 2025 – January 2026

- Developed a pose-invariant feature extraction framework that generates 128-dimensional embeddings from 21 MediaPipe keypoints, integrating normalized 3D spatial data and angular relationships to maintain consistency across diverse hand scales.
- Designed a streamlined Multi-Layer Perceptron (MLP) architecture in PyTorch, prioritizing low-latency CPU performance by substituting heavy, pixel-dependent CNNs with efficient, coordinate-based classification.
- Engineered a high-throughput inference engine leveraging OpenCV and MediaPipe to analyze real-time video, mapping skeletal data and rendering predictive confidence metrics with minimal overhead.
- Constructed an automated preprocessing pipeline that parses image repositories for valid hand signatures, serializing the resulting feature vectors into JSON for accelerated training cycles.
- Created a frame-sampling utility to scale training data, automating the transformation of raw video footage into thousands of vectorized samples for more comprehensive model coverage.

Gesture-Controlled Presentation System October 2026 – Present

- Technical Lead in a 10-person team building a gesture interface for PowerPoint and a photo gallery using time-of-flight sensors
- Wrote C firmware on an STM32F030 (HAL, CMake) driving three VL53L1X sensors on a shared I2C bus, assigning unique addresses at boot through XSHUT lines controlled via I2C GPIO expanders
- Implemented time-based gesture recognition (swipe left/right, zoom in/out) with cooldown and release logic to suppress false positives
- Designed the STM32–PC serial protocol (framed UART packets with CRC) and reviewed team code

Foodly - AI Food Recognition & Recipe Assistant November 2024 – March 2025

- Awarded 3rd Place (out of 18 teams) at EduTech Hackathon #4 and selected as the only 1st-year team to advance in Innovation Labs Bucharest via technical mentorship votes.
- Migrated the vision stack from API-heavy solutions to a localized YOLOv8 (Nano) model, reducing latency and enabling seamless, offline-capable ingredient tracking.
- Engineered a "Smart Store Locator" using OpenStreetMap data to dynamically identify and map partner supermarkets based on user IP proximity.
- Developed a specialized "Inventory-First" ranking algorithm that filters recipes based on available stock to directly address food waste.
- Scaled the application from a cloud-based concept to a fully functional localized desktop MVP in under 15 hours of continuous development.

TVizier - Classroom Timetable Visualiser API November 2025 – January 2026

- Built a Java pipeline that converts unstructured Excel timetables into a relational SQL database, with custom validation rules for malformed entries
- Implemented an Apache POI parsing engine that normalizes scheduling data from several spreadsheet formats into one relational schema
- Decoupled data ingestion from storage to allow a later move to a Spring Boot architecture

Certifications

Advanced Digital Skills in Cybersecurity and Artificial Intelligence November 2025

Transilvania University of Brașov (PNRR Digital Transformation Initiative)

- Completed an intensive technical program focused on the intersection of AI and Cyber Defense, involving both theoretical frameworks and practical laboratory applications.
- Validated proficiency through baseline competency testing and hands-on exercises in data security and machine learning implementation.

Volunteer

Mentor at Programare cu Rabdare December 2022 – June 2023

Bacau, Romania

- Provided educational support in programming to middle and high school students.
- Taught visual programming via Scratch and provided guidance on C/C++ coding practices.

Languages

English

Fluent (B2)

French

Beginner (A1)