

DRAGOȘ-VLAD FIT

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TECHNICAL SKILLS

Languages C, C++, Python, TypeScript, x86 Assembly, VHDL
Tools Git, GCC, GDB, Make, Linux/Bash, AMD Vivado
Libraries SDL3, ONNX Runtime, InsightFace, NumPy, VS Code Extension API

EDUCATION

Bachelor of Computer Engineering — Technical University of Cluj-Napoca Oct. 2025 – Jun. 2029 (expected)

Coursework: Data Structures and Algorithms, Digital System Design, OOP, Assembly Language Programming

PROJECTS

Mini Chess Engine | C github.com/Fitz353/mini-chess-engine

- Built a move generator and mate-in-one solver from scratch: a FEN codec, pseudo-legal generation for all six piece types including four-way promotion, and make-move legality filtering.
- Detects check by casting rays outward from the king rather than enumerating opponent moves — measured at 16M attack queries/s against 2.4M full move generations/s.

2D Space Shooter | C++20, SDL3 github.com/Fitz353/shooter-game

- Real-time 2D shooter on SDL3 with an 8-class entity hierarchy: a base Entity owns position, sprite-sheet animation and lifetime, and the player, bullets, explosions and three enemy behaviours derive from it.
- Holds enemies as unique_ptr to an abstract base so a single update loop dispatches three movement behaviours without slicing, while bullets and effects are stored by value; dead entities are swept once per frame rather than erased mid-iteration.

FPGA Washing Machine Controller | VHDL, Nexys A7-100T github.com/Fitz353/WashingMachine-controller

- Designed a 13-state Moore FSM driving a strictly separated datapath of 24 VHDL modules (2,400 lines) across seven wash phases, with five programs in a combinational ROM plus manual configuration.
- Expressed the entire seven-phase wash program as control-unit outputs alone, leaving datapath modules as reusable resources with no sequencing logic of their own, so changing the sequence touches one file.

C Memory Police | TypeScript, VS Code Extension API github.com/Fitz353/C-Memory-Police

- VS Code extension that flags memory leaks, double frees and unsafe realloc patterns in C source as the user types, with 500 ms debounced reanalysis through the Diagnostics API.
- Resolves pointer alias chains back to the originating allocation, follows local #include directives to catch functions that allocate internally, and suppresses pointers that escape by return.

See Me — Face Search | Python, ONNX Runtime, InsightFace github.com/Fitz353/see-me

- Matches ArcFace face embeddings against a photo library by cosine similarity, running InsightFace models through ONNX Runtime with a CUDA-to-CPU fallback; a conjunctive mode returns photos containing every selected person.
- Detects and crops faces from the reference images first; similarity is a plain dot product, since the embeddings are already L2-normalized.

HACKATHONS

Thermal Sleuth — CASSINI Hackathon 2025 | Python, Flask, Sentinel-3 github.com/Fitz353/Thermal-sleuth

- Team of 5 at the CASSINI hackathon; built the backend detecting industrial thermal discharge in EU waters from Sentinel-3 imagery, served through a Flask API to a Leaflet map dashboard.

EXPERIENCE AND VOLUNTEERING

Member, OSUT (Student Organization) Cluj-Napoca, Romania | Oct. 2025 – Present

- Helped organize technical workshops and student events, coordinating logistics across departments.

Vice-President and HR Manager, Interact Club Alba Iulia, Romania | Oct. 2021 – Jun. 2024

- Recruited and onboarded new members as HR Manager; as Vice-President, coordinated project teams and chaired meetings across three years of community campaigns.