

# Ijtihed Kilani

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## EDUCATION

### Aalto University

*Master of Science in Mathematics*

Jun 2027

*Graduate Minor in Algorithms & Theoretical Computer Science*

*Bachelor of Science in Computational Engineering*

Jun 2026

## EXPERIENCE

### Founding Software Engineer

*Kova Labs*

Nov 2025 – Present

*Helsinki, Finland*

- #1 hire **leading simulations & digital twin** at a Lifeline Ventures-backed startup building drone autonomy.
- Built a custom drone physics simulator in TypeScript; sustained **80%+ real-time factor** with tight update loops.
- Implemented a **real-time sensor/vehicle digital twin interface** that cut autonomy integration **2 days → 3 hours**.

### Research Assistant

*Aalto University, Computational Behavior Lab*

Nov 2025 – Present

*Espoo, Finland*

- Reproduced Physical AI **NeurIPS 2024** CooHOI baselines with **GPU-parallel simulation** using PyTorch/CUDA.
- Building a Unity OpenXR ↔ Isaac Gym bridge to stream real-time VR human motion for human-in-the-loop policy eval.

### Teaching Assistant

*Aalto University, Department of Computer Science*

Sep 2025 – Jan 2026

*Espoo, Finland*

### Software Engineer

*Sensofusion*

Mar 2025 – Nov 2025

*Helsinki, Finland*

- Joined at age 17 one of the fastest growing anti-drone startup in Europe as **lead simulations engineer**.
- Shipped an end-to-end drone simulator (TS + Three.js, Python/C++ backend) with hand-optimized 3D assets.
- Reduced cold start **from 15 s→2.5 s** and improved **FPS 30→60** via lazy loading/reducing per-frame allocations.

## PROJECTS

### Self-Hosted Home Server (Lab) | *Debian, KVM, CUDA, Ollama, Tailscale, SSH*

- Deployed a systemd-managed self-hosted GPU LLM service with VPN-secured remote access (Tailscale + SSH) for 24/7 use.

### Agentic AI Clinical Scribe | *FastAPI, WebSockets, Next.js, SQLite, OpenAI API*

- Deployed a streaming transcription backend (FastAPI + WebSockets) with **<2s** end-to-end latency at **HackMIT '25** (24 hours).
- Built a **3-agent** pipeline generating doctor's SOAP notes in **<3s** with **95%** accuracy.

### The Yappin' Spirit (Real-Time Emotion Game) | *Python, Flask, OpenCV, Unity*

- Streamed end-to-end emotion inference (OpenCV → model → Unity) at **60 FPS** with **<50ms** end-to-end latency (48 hours).

### Physical Race-Car Suspension Bracket | *Python, Ansys*

- Automated an FEA + topology-optimization workflow for a **race-car** suspension bracket.
- Converted solver outputs into a manufacturable model; reduced weight **25%** while meeting stiffness targets (on-car validated).

## AWARDS AND ACHIEVEMENTS

### National Olympiad for Programming (KSA), #1 / 200,000 participants

2024

*1st round; Featured on local + national news. Speaker at events.*

### World Robotics Olympiad ('22 & '23), 2x Silver + 1x Bronze (#2, #4 & #5 / 2,500+)

2023

*Built fully custom PCB board used by AI-powered autonomous physical health assistant (mobile robot).*

### Co-founder, Null Fellows (Fellowship)

Present

*Led cohort operations for a Europe-based builder fellowship placing talent into hyper-scaling European startups.*

## TECHNICAL SKILLS

**Languages:** Python, C++, TypeScript/JavaScript

**Tools/Tech:** Linux, Docker, GitHub Actions, WebSockets, FastAPI, SQL (PostgreSQL/SQLite), Flask, Node.js, AWS, Google Cloud, ROS2, PX4, Unity