Ozan Malcı

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Experience

Embedded Systems & Robotics Intern, Bytemounts – Serdivan, Sakarya Aug 2026 – Aug 2026

Migrated an autonomous differential-drive waiter robot from **ROS 1 Melodic** to **ROS 2 Jazzy**, bench-testing the stack on an Intel N100 SBC ahead of an NVIDIA Jetson Orin Nano deployment. Developed **Python (rclpy) ODrive** and **LiDAR** drivers, configured **Nav2** and **SLAM** Toolbox, and built systemd services with a **Flask** web cockpit for telemetry and goal dispatch.

- Redesigned the 4000x4000 occupancy grid map pipeline, replacing an unstable WebSocket/JSON transport with Flask HTTP rasterizer endpoints serving timestamped PNG tiles and metadata.
- Profiled the rasterization callback with `tracemalloc` and `time.perf_counter()`, cutting latency 72% (146 ms to 40 ms) and peak heap memory 98% (16.73 MB to 0.27 MB) using zero-copy `Image.frombuffer` with `orientation=-1` stride handling.

Full-Stack Developer Intern, Ankageo – Başakşehir, Istanbul June 2026 – July 2026

Built a full-stack network diagnostics toolkit (DNS, traceroute, WHOIS, ASN) with per-user query history and JWT authentication.

- Developed the backend with **Hono**, **Prisma**, and **SQLite** featuring **Zod** validation and query caching, built the frontend with **React** and **Vite**, and automated deployments to AWS EC2 using **Nginx** and **GitHub Actions** CI/CD.

Education

Sakarya University, BSc in Computer Science – Sakarya, Türkiye Sept 2021 – Sept 2026

- Selected Coursework
  - Introduction to Cryptology – classical and modern crypto primitives, symmetric and public-key systems
  - Network Programming – socket APIs, concurrency, client-server systems
  - System Administration – server management, virtualization, network services

Projects

SDN-Based Automated Threat Detection and Mitigation System – Capstone Project Jan 2026 – June 2026

Built an SDN intrusion response system with **Suricata** and **Ryu** to detect and mitigate network attacks on a simulated enterprise WAN.

- Engineered a **Python** alert pipeline converting Suricata EVE JSON alerts into dynamic **Ryu OpenFlow 1.3** rules on **Open vSwitch**.
- Configured a segmented **Mininet** topology with OVS port mirroring, automating network provisioning and test scenarios with **Bash**.
- Simulated network attacks using **Scapy**, covering floods, scans, ARP spoofing, MAC flooding, and brute-force attempts.

P2P File Exchange – github.com/ozan2003/p2p_file_exchange

Developed a peer-to-peer file transfer desktop application for local networks using **C#** and **Avalonia UI**.

- Implemented UDP peer discovery using Ed25519-signed announcements to prevent impersonation.
- Encrypted TCP file transfers end-to-end using X25519 key exchange and ChaCha20-Poly1305 authenticated encryption.
- Enforced trust-on-first-use identity verification backed by a persistent **SQLite** trust database.

Skills

Programming Languages: Python, Rust, C#, Bash

Tools: GNU Make, pytest, Git, uv

Network Simulation: Cisco Packet Tracer

RDBMS: SQLite

Languages: Turkish, English (YDS: 87.5)