Tunahan Yardimci

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Summary

Computer Science student focused on backend engineering and data-intensive systems, with hands-on experience in PostgreSQL, Go, FastAPI, and database-backed application design. Currently building practical depth in OLTP systems, schema design, transaction safety, local-first software, and storage-engine concepts through projects, part-time engineering work, and technical writing.

Education

Istanbul University — Istanbul, Turkey
B.Sc. in Computer Science | GPA: 3.65/4.00 | Recent Semester GPA: 4.00/4.00 — *Expected 2028*

Professional Experience

Software Engineer, Part-Time — Mar 2026 – Present
Istanbul University — *Istanbul, Turkey*

- Led backend and PostgreSQL schema design for a department-wide academic mobile application under development, proposing core data models, integrity rules, and service boundaries reviewed by the engineering team.
- Designed relational data models, indexing strategy, and integrity constraints for academic workflows involving student/staff access, administrative operations, task tracking, and auditability.
- Implemented backend services and data access layers in collaboration with teammates, with code reviews around API behavior, transaction boundaries, and database consistency.

Projects

Koru (Local-First Document Board) | *Go, SQLite, FTS5, OCR, Gio* — 2026

- Built a desktop-first, local-first document workspace for importing, searching, tagging, exporting, and recovering personal records such as invoices, contracts, certificates, scans, and notes.
- Implemented a local storage core with SQLite FTS5 search over filenames, tags, extracted PDF text, and OCR output, plus content-addressed blob storage with SHA-256 verification and deduplication.
- Developed both native Gio desktop workflows and CLI commands for import, search, export, tagging, soft delete/restore, backup/restore, OCR jobs, and storage health checks.

NeuroPass (1st Place, NeuroBridge Hackathon) | *Python, FastAPI, Scikit-learn, Docker* — 2026

- Built an ML-based drug screening pipeline from SMILES inputs, including dataset cleaning, feature preparation, model training, and prediction APIs for BBB permeability, logBB exposure, and Tox21 toxicity risk.
- Trained and compared 18 classical ML models, selecting ExtraTrees-based models that reached approximately 0.95 AUC in internal evaluation.
- Combined probabilistic model outputs with deterministic medicinal-chemistry rules to produce interpretable screening results and risk explanations.

Leadership & Community

President, Data Club Community — 2025 – Present
Istanbul University — *Istanbul, Turkey*

- Led 7 technical events across AI, data science, ML, open source, and neuroscience with speakers/partners including Red Hat, EPAM, PyData, and Turkish AI Community.
- Coordinated speaker outreach, partner communication, and event planning, building relationships with engineers, researchers, and technical communities.

Co-Founder & Technical Writer — 2025 – Present
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- Publish technical essays on data systems, LLM behavior, and engineering trade-offs, including articles on LSM-tree vs. B-tree storage engines and LLM hallucinations.
- Explain database internals and data-intensive system concepts such as OLTP workloads, indexing trade-offs, WAL, Bloom filters, and compaction.

Technical Skills

Languages: Python, Go, SQL | **Data**: PostgreSQL, SQLite, DuckDB, Data Modeling, Query Optimization, Pandas | **Backend**: FastAPI, SQLAlchemy, Alembic, Docker, REST APIs | **Tools**: Linux, Git