

TUNCAY ÜNAL

Hamburg, Germany · UK Skilled Worker sponsorship required · New entrant

✉ tuncayunal@hotmail.de [in LinkedIn](#) [GitHub](#) [Portfolio](#)

EDUCATION

University of Hamburg

MSc Computer Science

Oct 2023 – Aug 2026

Germany

University of Hamburg

BSc Human-Computer Interaction

Oct 2020 – Sep 2023

Germany

WORK EXPERIENCE

Lufthansa Technik AG

Software Engineer, AI Training Systems (Master's Thesis)

Jan 2026 – Aug 2026

Hamburg

- Built an artificial intelligence (AI)-supported **real-time learning system** for cabin fire-and-smoke procedures and ran it with **24 participants**, finding **19.38-point** higher mean **SUS** usability scores with progressive disclosure versus full visibility
- Integrated **OpenAI speech recognition**, conversational **tutoring** and **speech synthesis** with **visual cueing** across 9 instructional sections and 2 concept-map construction tasks
- Implemented task progression, automated evaluation and recovery, and **JSONL/CSV telemetry** capturing **4,700+** events, **85+** evaluation attempts and **100+** concept-map snapshots

Lufthansa Technik AG

Software Engineer Intern

Sep 2025 – Nov 2025

Hamburg

- Shipped **Unity/VR Builder** training features at Lufthansa Technik, a 23,000+ employee global engineering organisation supporting ~5,100 aircraft, taking an internal VR training product from **proof of concept** to **deployment** and **ongoing use** by trainees
- Developed reusable custom **VR Builder behaviors and conditions** for Lufthansa Technik's enterprise training applications, creating **shared XR components** within an organisation serving **800+** aviation customers worldwide
- Localised subtitles and audio into English and deployed the **English VR build** for **headset testing**; showcased XR applications at **2 trainee/newcomer-facing events**, including Lufthansa Technik's monthly Welcome Day amid 2,000+ planned hires in 2025

Fraunhofer CML

Software Engineer

Nov 2023 – Feb 2025

Hamburg

- Developed and optimised **Unity/C# real-time 3D** applications at Fraunhofer, Europe's largest applied-research organisation with ~32,000 employees and €3.6B annual research volume, for **maritime** and **robotics R&D**
- Built a browser-based **Unity WebAR viewer** integrating camera access, **image tracking** and **interactive 3D** presentation, enabling marker- and business-card-triggered AR experiences

SELECTED ENGINEERING PROJECTS

OpsReplay – Incident Intelligence Platform | [GitHub](#)

Python | React | PostgreSQL

- Built a **Python/FastAPI** backend with **9 API endpoints** and **5+ PostgreSQL tables**, normalizing **GitHub** push webhooks into chronological repository timelines with source-event provenance.
- Implemented **idempotent** webhook ingestion with **HMAC** verification, a PostgreSQL transactional outbox, and 2 background processes for **SQS** publishing and consumption; committed timeline updates before acknowledging messages.
- Added **30+ automated API tests** covering GitHub App integration, webhook verification, **duplicate processing**, queue acknowledgement ordering, and organization-scoped timeline queries.

Full-Stack Patient Appointment Scheduling System | [GitHub](#)

Next.js/TypeScript | Supabase

- Built a **full-stack Next.js/TypeScript** appointment-scheduling prototype with **3 views**—month, week and list—and patient, category and **date-range filtering**
- Implemented **3 REST mutation operations** for appointment creation, updates and deletion, with **Zod** validation covering **7 request fields** and server-side **Supabase** writes
- Integrated **3 related Supabase** tables through **relational queries** and **cached reference data**, preserving selected calendar views and filters across page reloads

TECHNICAL SKILLS

Backend & Data: Python, FastAPI, SQL, PostgreSQL, SQLAlchemy, Pydantic, REST APIs

Frontend: TypeScript, JavaScript, React, Next.js

Cloud & Delivery: Amazon Web Services (AWS)/ Amazon Simple Queue Service (SQS), Docker, Terraform, continuous integration continuous deployment (CI/CD), Git

Testing, Systems: Integration testing, idempotent webhook ingestion, asynchronous processing, C#, Unity

AI: OpenAI integration, prompt-based LLM interaction

Languages: English — C2 (Pearson PTE Academic UKVI); German — native