

Mert Uygur

Staff Software Engineer

Ankara, Turkey

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ABOUT

Staff Software Engineer with 9+ years of experience across full-stack product engineering and systems software. At Udemy, I led the AI Role Play microfrontend migration, shipped real-time voice and video-avatar features, expanded the containerized code-execution platform, and fixed a critical sandbox RCE. Earlier in my career, I built C++ and Java software for defense and avionics systems. I focus on maintainable systems, safe staged rollouts, and close collaboration with product, design, data, and ML teams.

SKILLS / TECH STACK

Languages	TypeScript, Python, Kotlin, Java, C++, SQL
Frontend	React, Next.js, microfrontends, WebSockets
Backend	Django, gRPC, Protocol Buffers, GraphQL, Kafka
Cloud / Infrastructure	AWS, EKS, Docker, Kubernetes, Terraform, Helm, ArgoCD
Observability	Datadog, Sentry, structured logging
Systems	Linux, RTOS, Boost, DDS, RS-232, JNI

EXPERIENCE

Udemy / Staff Software Engineer Nov 2022 – Present · Ankara, Turkey

Technical contributor across AI Role Play, coding exercises, and Practice Tests on a learning platform serving nearly 84 million learners, partnering with product, design, data, ML, and platform teams to ship learner and instructor experiences, backend services, and runtime infrastructure.

Staff Software Engineer Mar 2026 – Present

- Led the AI Role Play learner UI microfrontend migration, defining module boundaries, integration contracts, and staged rollout strategy across the course-taking experience.
- Shipped production AI Role Play capabilities across TypeScript/React, Python/Django, Kotlin gRPC, and WebSocket services, including instructor publishing, org-level controls, multilingual support, analytics, and rollout telemetry.
- Built and hardened conversational and video-avatar flows with browser VAD, streaming STT, low-latency TTS, mic capture, audio framing, barge-in handling, session lifecycle handling, third-party token APIs, and Kubernetes/Helm configuration.

Senior Software Engineer Nov 2022 – Mar 2026

- Expanded Udemy's in-browser coding exercise platform to SQLite3, PostgreSQL, C++20, Java 21, and web development, extending its Django/GraphQL APIs and learner templates.
- Built isolated Docker evaluators on AWS EKS that run learner code under time limits, test it against instructor solutions, and return results over WebSockets, backed by Terraform/ECR pipelines and Kubernetes image pre-pulling for faster cold starts.
- Delivered AI-powered Practice Test experiences with generated answer explanations, content-hash caching to reduce duplicate LLM calls, result-review flows, and instructor workflow analytics.

- Fixed a critical remote code execution (RCE) vulnerability in the code-evaluator sandbox, and improved reliability by compressing real-time Pusher payloads, migrating gRPC proto contracts, moving Python services to structured logging, and improving Sentry/Datadog signal quality.

Bites / Senior Software Engineer

Apr 2020 – Oct 2022 · Ankara, Turkey

Defense and aerospace software and simulation company, an ASELSAN subsidiary.

- Built telemetry and telecommand software in Java on the open-source YAMCS framework, controlling hardware and sharing its status with other system components over RS-232 serial and network protocols.
- Developed C++17/Linux software that dynamically loaded Simulink-generated missile model libraries for an air defense simulation, communicating with system components through an asynchronous Boost TCP server.
- Contributed to high-performance C++ radar adapter software using DDS, TCP, and Google Test, with automated Azure DevOps build, test, and release pipelines.

Ayesas / Software Engineer

Dec 2016 – Apr 2020 · Ankara, Turkey

Defense and aerospace systems company: C4ISR, avionics, and electromechanical systems.

- Built Java/OSGi control software for a frigate's decoy launchers on distributed Linux systems, including a C++ JNI wrapper and automated TeamCity builds.
- Developed the C++ communication component of Link 16 tactical data link software on Integrity RTOS and helped integrate it into the avionics system.
- Built C++/Qt automated regression-testing infrastructure for utility helicopter digital map software.

EDUCATION

Middle East Technical University / M.Sc. in Computer Engineering

2018 – 2021 · Ankara, Turkey

Capstone project: automated classroom attendance using a single-board computer, a camera, and AI inference.

Bilkent University / B.Sc. in Computer Engineering

2012 – 2016 · Ankara, Turkey

Foundation in algorithms, systems programming, software engineering, and computer systems.