Konstantin Unterweger

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Education

MSc Software Engineering & Internet Computing *10/2025 – present*
TU Wien, Vienna, Austria

BSc Informatics (Specialisation: Artificial Intelligence) *10/2022 – 07/2025*
TU Wien, Vienna, Austria
Bachelor Thesis: A Systematic Approach to the Temporal Analysis of Dependency Updates in Software Projects
Built a language-agnostic tool to reconstruct full dependency update histories across Git commits, applied to nine open-source repositories (Java, Python, JavaScript). Identified manifest fragmentation as the dominant predictor of update latency: projects with 5+ manifest files lag up to 250 days behind upstream releases.

Austrian Matura (High School Diploma) *09/2013 – 06/2021*
Bundesrealgymnasium 19, Vienna, Austria

Scholarships

TU Wien Leistungsstipendium (Merit Scholarship) *2025*
Competitive ranked award by the Faculty of Informatics; based on weighted performance score (GPA × ECTS credits), requiring GPA < 1.50 (Austrian scale, 1.0 best)

Work Experience

Tutor – Programming Paradigms & Introduction to Programming 2 *10/2024 – present*
TU Wien, Institute for Information Systems Engineering (E194)

- **PP:** Supervised and supported up to 17 student groups through the introductory phase; served as primary point of contact and conducted exam invigilation
- **EP2:** Corrected and graded practical exercise submissions for 2 groups; provided structured written feedback contributing directly to final assessment

AI Developer Intern *09/2023 & 09/2024*
Onlim GmbH, Vienna *(2 × 1 month)*

- Developed and optimised NLP pipelines for production conversational AI systems
- Designed and ran evaluation frameworks for chatbot model quality and robustness
- Contributed to dialogue management and intent classification components

Projects

Distributed Taxi Stream Processing
Real-time data streaming pipeline for taxi location analytics using *Apache Kafka*, *Apache Storm*, and *Redis*, with a live web dashboard for visualisation.

Audio Fingerprinting (Shazam Algorithm)
Python implementation of the Wang (2003) audio identification algorithm; hash-based fingerprint matching enabling efficient song recognition across a reference database.

Rust OS
Experimental operating system in Rust covering bootloading, memory management, interrupt handling, and direct hardware interaction.

Medical Volume Visualisation
WebGL/JavaScript application for direct volume rendering of MRI and CT scans, implementing transfer functions and ray casting.

Rocket League Trick-Shot Classifier (Kaggle)
Machine learning model classifying in-game trick shots from player input metrics; placed **7th out of 132** in a university Kaggle competition.

Skills

Programming	Java, Python, TypeScript, JavaScript, Rust, C, SQL
Backend & Infra	Spring Boot, Apache Kafka, Apache Storm, Redis, REST APIs
DevOps & Tools	Docker, Kubernetes, Git, GitHub Actions, Maven, Linux/Bash
Web & Graphics	Angular, HTML/CSS/SCSS, Bootstrap, WebGL/OpenGL
AI & ML	NLP pipelines, audio fingerprinting, classification models (scikit-learn)
Languages	German (native), English (fluent)

Extracurricular Activities

Ice Hockey (WEV) *Ongoing*
20 years of competitive play at Bundesliga youth level; experience leading on-ice line changes and coordinating team tactics under pressure