

David Erik García Arenas

Software Engineer | Graphics, Tools & 3D Pipelines

Munich, Germany | Available from 1 October 2026

Munich-based software engineer who builds the test infrastructure and developer tooling other engineers rely on. At Paradox Cat GmbH I am sole author of the team's validation framework for BMW automotive 3D data: a Python core with a native C++ layer against the Ramses rendering SDK, serving a desktop app, a web dashboard and a CLI. Independently I work on C++ and Vulkan runtime research.

erikgaren.com linkedin.com/in/erikgaren daviderikgarciaarenas@gmail.com

EXPERIENCE

QA Intern - QA & Testing / Data Prep & Pipeline (3D Car)

Apr 2026 – Present

Paradox Cat GmbH · Munich, Germany · Full-time, fixed-term through Sep 2026

- Sole author of an internal QA framework for BMW automotive 3D delivery: one core serving a Qt/QML desktop app, a web dashboard and a CLI at parity.
- Wrote the native layer in C++/CMake against the Ramses rendering SDK and SDL3, with the Python core validating the native report before recording evidence from it.
- Read-only by design; ~1,800 automated tests across 21 surfaces, run against 26 real car models.
- In-vehicle data recording for a client child-presence-detection (CPD) project (Sep 2026), three days per week in an instrumented test vehicle.

Test Automation Engineer (Erasmus+ Placement)

Jan – Mar 2026

Paradox Cat GmbH · Munich, Germany

- Validated Android Automotive HMI using ADB, dumpsys, and runtime diagnostics on embedded and bench systems.
- Built Maestro flows and analyzed hierarchy/selector behavior before scaling regression coverage.

AI Evaluator / Prompt Engineer (Freelance)

Nov 2024 – Jan 2026

Outlier · Remote

- Evaluated English-language model outputs against quality, safety, usefulness, and consistency criteria.

Cybersecurity & Automation Intern (350h FCT)

Mar – Jun 2025

Finanzas & I+D+i · Granada, Spain

- Contributed to web-security hardening, server and storage optimisation, client-portal design, and an applied-AI proof of concept; produced technical reports and received a recommendation letter.

SELECTED ENGINEERING WORK

Automotive 3D Pipeline Tooling

Sanitized case study

Reads a car's delivery tree and reports what is there, what is missing and what breaks the rules.

Evidence: Registry-driven core, native C++ probe against Ramses and SDL3, and reviewer-facing evidence.

HawaiiOS

Live

Live SSR portfolio with a Preact shell, tiles, a window manager, and a Three.js WebGL street scene.

Evidence: Server-rendered TypeScript/Preact with a Three.js WebGL scene, deployed and operated by me on my own Linux server with Caddy, systemd and versioned releases.

RYU6Recomp

Active WIP

Private C++/Vulkan runtime-rehosting research with Ghidra, runtime instrumentation, shader investigation, and presentation work.

Evidence: Ghidra-led C++/Vulkan research, a public Vulkan write-up, and no final-playability claim.

Sonic 4: Episode II Research

Active WIP

Decompilation-led reimplementation of the original game into C#/MonoGame for desktop and Android, with Python tooling for its undocumented binary formats.

Evidence: C#/MonoGame, Android, and Python work; 325 C# tests, 15 Python tests, Android Release; runtime remains open.

SKILLS

Languages C++17 · Python · QML · C# · TypeScript · SQL

Graphics & 3D Vulkan · GLSL · Ramses · SDL3 · glTF · DirectX 12

Tools & frameworks Qt · React / Preact · Express · FastAPI · Linux · Docker · Git

Engineering practice Runtime diagnostics · Test automation · Binary analysis · Windows packaging · CI/CD

EDUCATION

BSc (Hons) Computer Science

Canterbury Christ Church University (UK) · Sep 2026 – Jun 2027 · in progress

Modules: Artificial Intelligence · Cyber Security · Advanced Operating Systems · Intelligent Cloud and Data Systems

Dissertation: matching decompilation and graded CFG-similarity oracle for x86-64 binary reconstruction

Higher Technician in Development of Web Applications

Técnico Superior en Desarrollo de Aplicaciones Web · IES Francisco Ayala, Spain · 2025 – 2026

Higher Technician in Multi-platform Applications Development

Técnico Superior en Desarrollo de Aplicaciones Multiplataforma · MEDAC, Spain · 2023 – 2025

SELECTED CREDENTIALS

Professional Cybersecurity Programme, 60 ECTS · UCAM · offered through MEDAC (Davante) · completed Jun 2025

C1 Advanced (CAE) · Cambridge English

Foundations of Software Testing and Validation · University of Leeds

Agile with Atlassian Jira · Atlassian

Selected credentials · additional training on LinkedIn

LANGUAGES

Spanish: Native · English: C1 (Cambridge CAE) · French: Basic, actively learning · German: Beginner, actively learning