Ahmad Zulhazmi Zulkefli

Software Engineer | Mechanical Engineer

Stuttgart, Germany | +49 1525 9446595 | zulhazmi.zulkefli@gmail.com
linkedin.com/in/azulhazmizulkefli | zulhazmi.com

SUMMARY

Software engineer at ZEISS, mechanical engineer by training. Eight years (2014-2022) in automotive machine design, on ball screws and steering gears, taught me to build the tools I was missing, in MATLAB and VBA; software engineer at Gebr. Heller and ZEISS since 2022. On the side I design Axomek, engineering calculation software for machine elements that AI agents can run. Languages: English, German, Malay.

Core skills: Angular, TypeScript, RxJS, Python, MATLAB, front-end development, engineering calculation software, machine elements, FEM, AI coding agents

EXPERIENCE

Software Engineer, ZEISS Group | Aalen, Germany — Jan 2023 - Present

Software Engineer, Gebr. Heller Maschinenfabrik GmbH | Nürtingen, Germany — Apr 2022 - Dec 2022

Development Engineer, CW Bearing GmbH | Göppingen, Germany — Jan 2016 - Mar 2022

- Designed ball screw systems for automotive applications such as brakes and clutches in SolidWorks.
- Programmed ball screw calculation tools in MATLAB.
- Built Excel VBA tools to automate the part number system and to chart large sets of measurement data for failure analysis.

Mechanical Design Engineer, Bosch Automotive Steering | Penang, Malaysia — May 2015 - Dec 2015

- Designed mechanical steering gears in Creo and validated the designs with FEM simulation.
- Prepared FMEA documents and supported NVH studies and testing.

Industrial Thesis Student, thyssenkrupp Presta AG | Esslingen, Germany — Mar 2014 - Nov 2014

- Developed a MATLAB program to calculate and optimise ball screw torque, friction and wear.
- Received the John Deere award for an outstanding thesis project.

Student Intern, thyssenkrupp Aufzugswerke | Neuhausen a. d. Fildern, Germany — Mar 2012 - Aug 2012

- Simulated the magnetic circuits of electric motors with the electromagnetic FEM software FEMAG and automated the calculations with Lua scripts.

PROJECTS

Axomek, personal project | axomek.com — Ongoing

- Engineering calculation software for machine elements (shafts, bearings, gears, bolted joints, fits, welds, springs, ball screws, linear guides) after DIN, ISO, VDI and EN standards.
- One calculation engine in Rust shared by a web app (WebAssembly), a Windows desktop app (Tauri, Angular), the axm command line and an MCP server for AI agents such as Claude Code and Codex.
- Verified against closed-form theory, the standards' worked examples and independent reference calculations. Technologies: Rust, WebAssembly, TypeScript, Angular, Tauri, three.js, MCP, Firebase.

BearingSolve, personal project | bearingsolve.com — 2021

- Rolling bearing calculation web app (ISO 281, ISO/TS 16281): load distribution and contact stresses from non-linear equations, with charts and 3D views; solver later ported to Rust in Axomek. Technologies: Angular, RxJS, NGXS, Python, NumPy, SciPy, Firebase, Google Cloud Platform.

SKILLS

Programming languages: TypeScript, JavaScript, Python, HTML, CSS, Sass, MATLAB, VBA, Lua

Frameworks and libraries: Angular, RxJS, NgRx, NGXS, Angular Material, Tailwind CSS, three.js, WebGL, NumPy, SciPy, Tauri, WebAssembly

Tools and platforms: Git, GitLab, Firebase, Google Cloud Platform, Claude Code, Codex, Model Context Protocol (MCP)

Mechanical engineering: SolidWorks, Creo, FEM, FEMAG, FMEA, NVH testing, ball screws, rolling bearings, gears, DIN and ISO standards

EDUCATION

Master of Engineering, Mechanical Engineering / Mechatronics, Hochschule Kaiserslautern — Mar 2013 - Nov 2014
Major: Simulation. Thesis: calculation program for ball screw optimisation (MATLAB).

Bachelor of Engineering, Mechatronics Engineering, Reutlingen University — Mar 2009 - Feb 2013
Major: Automation. Thesis: haptic controller demonstrator for HMI applications with 3D virtual objects (Python, XML).