

# Marvin Kilp

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## Senior Software Engineer and Leader

**Senior software engineer and technical leader** with 10+ years of experience building and shipping production systems on AWS. **Operate with a startup mindset inside larger organizations, owning end-to-end technical direction** across cloud, device, and frontend systems.

**Built and scaled software platforms from 0 to 1**, establishing architecture, tooling, and engineering processes from scratch while **moving quickly from concept to production**. Delivered **four connected life science devices to market** and transformed SaaS infrastructure to improve extensibility and **speed-to-market by 40%**.

Experienced in partnering with executive leadership to drive product strategy, with a strong focus on **rapid iteration, pragmatic decision-making, and high-impact delivery**.

Passionate about modern cloud architecture, the TypeScript ecosystem, and **embedding AI/LLM capabilities into real-world workflows**.

## Core Expertise

- Cloud Architecture (AWS: Lambda, ECS, RDS, API Gateway, CloudFront)
- Distributed Systems & Serverless Design
- TypeScript, React, Node.js, Python
- AI & LLM Integration in Production Systems
- Connected Devices & IoT Cloud Platforms
- Engineering Leadership & Cross-Functional Delivery

## WORK EXPERIENCE

**MilliporeSigma • Burlington, Massachusetts, United States • 02/2022 – Present**  
**Senior Software Development Lead**

- Operate as a de facto startup founder within R&D, owning **end-to-end technical direction** across cloud, device, and frontend systems
- Designed and implemented **backend services and APIs** powering 4 connected life science instruments, enabling reliable **device-to-cloud data ingestion and processing**.
- Built and scaled the entire software platform from 0→1, establishing **architecture, tooling, and development processes** from scratch within the **first year**
- Took ownership of the existing **SaaS cloud platform** and directly implemented improvements to core services, increasing delivery efficiency and new customer acquisition by **25%**.
- Re-architected and implemented **backend SaaS services on AWS (Lambda, ECS, RDS)**, improving extensibility and reducing time-to-market by **40% within 12 months**.

- Built and deployed **full-stack applications using React, TypeScript, and serverless AWS services (API Gateway, Lambda)**, improving performance, scalability, and user experience.
- Utilized **AI agents and LLM-based tooling** to enhance development workflows, increasing team code output by **25%** while maintaining production quality.
- Partnered with **VP-level and senior leadership** to align technical strategy with business objectives while maintaining **hands-on ownership of system design and implementation**.
- Regularly **write and review production code** across backend services and APIs, contributing directly to implementation, debugging, and deployment of critical systems.
- Implemented a cloud-based machine learning solution with a **Python backend**, resulting in a 50% increase in processing speed and efficiency.

### **Merck Group • Darmstadt, Hessen, Germany • 08/2015 – 02/2022**

#### **Senior Solutions Architect & IT Project Manager**

- Developed a **graph-based analytics platform using AWS Neptune** to model relationships across publication and clinical trial data, enabling identification of key opinion leaders and collaboration networks.
- Designed and implemented **AWS-based data pipelines (Lambda, Glue, Redshift)** processing large-scale **healthcare claims data**, building ETL workflows and orchestration logic for analytics and ML use cases.
- Built and optimized **batch data processing services**, improving data pipeline efficiency by **50%** and enabling faster data availability for downstream analytics.
- Designed and implemented **backend services and integrations** for healthcare systems, including a digital interface between **Kissling weighing systems and SAP**, enabling automated data exchange.
- Built a **targeted email service platform** leveraging healthcare profile data, increasing user adoption by **30%** through improved segmentation and delivery logic.
- Led a cross-functional engineering team while remaining **hands-on (~65% coding)**, contributing directly to backend services, data pipelines, and system design.

#### **Software Engineer and Corporate Student Business Informatics**

- Implemented and worked on reporting dashboards for the Service Now platform
- Worked on Veeva UAT related topics. Developed Salesforce chatbot prototypes. Was responsible for the rollout of the Veeva Windows 8 App in Portugal.
- Deployed augmented reality applications for Microsoft HoloLens, enhancing user engagement and training efficiency within 6 months.
- Developed a chatbot which was fully integrated into the Salesforce environment in the department
- Developed and prototyped a universal chatbot framework based on AWS. The goal was to enable business customers to build their own custom bots without programming knowledge

**T-Systems International GmbH • Mannheim Area, Germany • 09/2012 – 08/2015**

**Software Engineer**

- Developed and maintained **COBOL applications on IBM AS400 systems**, supporting dealer management systems for **Daimler and Mercedes-Benz**.
- Worked with **Subversion (SVN)** for version control and collaborated on enterprise-scale legacy system maintenance and enhancements.
- Contributed to modernization efforts by prototyping approaches to **expose COBOL-based systems to web applications using PHP**, enabling early exploration of web integration for legacy platforms.
- Supported migration and integration initiatives to bridge **mainframe systems with web and mobile interfaces**, improving accessibility of legacy business systems.

**ARTRONIX LTD • Glasgow, United Kingdom • 08/2014 – 10/2014**

**Software Engineer**

- Programmed robots at the University of Scotland (Artronix) for educating kids in robotics.

**EDUCATION**

**Bachelor of Science – BS in Business Informatics**

Baden-Wuerttemberg Cooperative State University (DHBW) • 01/2015 – 01/2018

**CERTIFICATIONS**

**AWS Certified Solutions Architect – Associate • 05/2021 – 05/2028**

Amazon Web Services (AWS)

**AWS Certified Cloud Practitioner • 06/2020 – 06/2023**

Amazon Web Services (AWS)

**SKILLS**

Chatbots, CI/CD, DevOps, Github, Github Actions, Node.js, SQL

**Infrastructure:** Amazon Web Services (AWS), Cloud Computing, Infrastructure as Code, Microsoft Azure, Pulumi, SST

**Programming Languages:** C#, C++, COBOL, Java, JavaScript, Python, QML, SQL, TypeScript