Dipl.-Inf. Matthias
Ruttmann
CURRICULUM VITAE

PROFILE

Senior software engineer, lead developer, junior AI researcher and freelancer with 20 years of experience in project design from idea to concept, initial design, work and lifecycle planning and test automation.

Technical background of communication and cloud technologies, Linux kernel hacker and clean code enthusiast.

EXPERIENCE

03/20 – 10/20

VR Navigation: Design a Unity plugin for medical analysis by utilizing a cut plane and object separation in MRI scans.

10/18 – 02/20

Mobile test system: The Rohde & Schwarz Contest Platform, a world leading platform to validate mobile technologies, introduced 5G hardware.

Redesign the test scenario framework as a microservice platform. Plan the modularization and synchronize the requirements with other departments.

Train the international team for the new platform, teach them C#, help with architecture decisions and review the code.

Utilized ZMQ microservices, protobuf descriptions, code generators and Jenkins integration. Windows and Linux platform with .net core and C++.

08/15 – 09/18

Mobile test system: Rohde & Schwarz Contest Platform.

Refactor the platform, unifying the grown test architecture. Implement new validation tests for location-based protocols.

Design an end to end test framework to automate user input variations and a DSL to specify those variations. Develop a Jenkins plugin for parallel test scheduling on a server farm and aggregate reporting.

2015

Mobile signal generator: The Aaronia BPSG is a small hardware generator for up to 6GHz continuous or modulated signals, coordinated by a PIC processor.

Design the firmware with hardware communication, update management and a stack interpreter. The PC software includes a profile editor compiler, processing power simulation and USB firmware upgrades.

2012 - 2014

HDMI test system: The Rohde & Schwarz Video Test Center was extended with an HDMI generator and analyser.

Integrate the FPGA based hardware to the software stack, including hardware drivers and GUI/remoting abstraction. Evolving the design documents.

2011

Soccer analysis: The TU München designed the streaming protocol for DFL Bundesliga games.

Design a client to display simultaneous Video and tactical information. Split the stream in meaningful, searchable scenes depending on factors like ball possession, events, player speed, groups and tactical deviation.

2003 - 2010	**Software engineer at Bartels System GmbH**

IP Router: System design for a Linux based IP router operating system with custom hardware. Implement major routing protocols like BGP, OSPF, RIP and a route policy framework.

Build a Linux kernel module, replacing the slow path routing with an optimized nexthop handling and a patented custom IP lookup hardware. Include support for access lists, Berkley Paket Filters, L2TP, PPPoE and IPSec.

Internet service provider: Build up an autonomous system with multiple data centers, full table BGP, 50 routers, 20 large customers and 5000 dial-up users, Radius and DNS infrastructure and multihomed multi-tier web servers.

PCB software: Support the Bartels Auteengineer Team, a software to design and autoroute printed circuit boards.

Extend the A-star based routing algorithm for multi-threading. Design an intuitive, context sensitive layer selection and macro recording.

Email SPAM Filter: Design a SMTP proxy to extract features during mail ingress, like dial in detection, mail repetition, automated white list, IP routing.

Build a rule language for context sensitive keywords, a bayes filter and the ingress features and machine learn the rule weights.

Spectrum analyser: Visualize the data of a HF spectrum measurement device with power spectrum, max hold, average, waterfall. Calculate directions by matching signals from multiple devices and antenna domes.

2000 - 2002

Aladin Development Studio: Design an IDE for a specialized database with designers for database structure, forms and reports.

Create a new language supporting external API, database as type safe record sets, compiler, stack interpreter, debugger and Active X integration.

1998 - 1999

Junior Software engineer at S.E.S.A. AG, Eschborn

Fonds backoffice and portfolio management: Setup automation for GUI tests of SER V3 Fonds.

Setup ticket management with QA Radar, support ISO 9000 certification and assist the support during the Euro introduction.

1993 - 1998

Graduate as Dipl. Inf at Fachhochschule Würzburg.

SKILLS

Expert at C#, C++ and domain specific language design.

Practical usage of Java, Typescript, Swift, Python and more.

Expert at Linux (Kernel and services), IP and Cloud technologies. Certified Azure Architect Technologies (AZ-300).

Strong private interest and training in computer vision and machine learning.

Lead developer with excellent social skills. I like to inspire team members for code quality and architecture, from newbies to sophisticated experts.

Find detail information and code samples at http://ms.00u.de