



Oliver Markus Maurhart

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About me:

I'm experienced in Software Engineering with the Waterfall, V-Model with large governmental bodies like EU (FP6 up to H2020), ESA, or national authorities on one side, but also with SCRUM with small teams for effective and efficient fast software development and deployment.

I see Software Engineering as a continuous maturity process: from analysis to product backlog to continuous integration and deployment. I have been doing technical consulting and support for enterprise IT infrastructure analysis in various companies.

I am very happy to support people fixing software, customizing it and getting it run. Between 2005 to 2015, I've been a moderator of a German Gentoo Linux [one of the most successful Linux Meta-Distributions] Forum (<http://www.gentooforum.de> - username: "dyle"). My credo is, therefore: "If there are a terminal, a shell, and a keyboard, there are solutions, not problems."

Over the years I touched Virtualizations Techniques (Xen, VMware, VirtualBox, Docker, LXC, ...), Product development for embedded small low-cost devices (Raspberry, UpBoard) up to large server 19" blades with several Xeon CPUs (Huawei E/X series). I programmed in several different languages including C/C++ (Modern C++ beginning with C++11 is awesome!), Python2, Python3, Java, C#, JavaScript, TypeScript, PHP, SQL, HTML, CSS, and others, using several frameworks like Qt3 up to Qt5, Boost, OMQ, Flask, Bottle, FastAPI, NodeJS, Vue3, React, Tailwind etc. I do think, that with the dawning of DevOps and the smart orchestration of parallel and distributed services we have entered a new stage of information processing. I am a Linux/Unix Poweruser creating and shaping interoperating worlds.

● WORK EXPERIENCE

30/09/2020 – CURRENT Klagenfurt, Austria
CEO HEADCODE.SPACE

Providing software solutions with

1. Modern **C++ (C++17)** application (network, e.g. CoAP, TCP/UDP, ...), native GUI Clients with **Qt**, cross-platform (Linux, Windows, Mac), DB interaction.
2. **Python** (incl. GUIs with **PyQt** and DB interaction).
3. **Java** and **Android** programming.
4. **Fullstack Development** with **JavaScript** and **TypeScript** on **NodeJS** using **Tailwind**, **Vue3** and **React**.

19/09/2022 – CURRENT Villach, Austria
TEACHER HTL VILLACH

Teaching at the HTL Villach

1. **Information systems**
 - a. DBMS and SQL
 - b. Data Modelling
 - c. Database Architectures
2. **Web Development**

a. JavaScript (e.g. React)

b. PHP

3. Media Technologies

01/02/2023 – CURRENT Klagenfurt am Wörthersee, Austria

SOFTWARE ENGINEER ILOGS INFORMATION LOGISTICS GMBH

1. Development of extension and adapters to the iLogs parking solution.
2. **J2EE** with **Payara**

01/05/2021 – 01/10/2022 Fürth, Germany

SOFTWARE ENGINEER KEEQUANT

1. Creating a development Quantum Key Distribution Post-Processing Pipeline in Python.
2. Contribution to various nationwide projects in the field of QKD.

31/03/2002 – 29/09/2020 Klagenfurt/Vienna, Austria

SOFTWARE ENGINEER AIT AUSTRIAN INSTITUTE OF TECHNOLOGY

Quantum Key Distribution

- Responsible for the development of the QKD post processing stack in **C/C++**.
- Major success: **SECOQC** (EU FP6 project, 2004-2008, https://en.wikipedia.org/wiki/Secure_Communication_based_on_Quantum_Cryptography).
- Concept and design of a **Quantum Back Bone Node (QBB)**.
- Concept and design of **Q3P - Quantum Point to Point Protocol** for ITS (information-theoretical secure) communication.
- Leading the Network/System Integration Development Team for QKD at AIT (based on **C/C++** and **Linux**).
- Participation of the AIT Team Software Team for the UQCC Tokio Network (2010, <http://www.uqcc.org/QKDnetwork/>).
- Several follow-up projects (e.g. QKD-Telko, ...)

Security

- Windows Explorer Drop-In Encryption Client based on **AES** (in **C/C++**).
- **Native Client GUI** in **C/C++** and **Qt** for **Windows/Linux/Mac** for the **BackMeUp** Project (<http://backmeup.at/about/>): backup of user data across multiple social media platforms.
- **OpenSecurity**: Security by Isolation with jailed applications running in disposable virtual environments seamlessly integrated into Windows Desktops (<http://www.opensecurity.at>) in **Python**, **VirtualBox**, and **Samba**.
- **CyberRange**: modelling of a vulnerable network environment along with attackers (malware) to stress test an organization's emergency policies (<https://www.ait.ac.at/en/research-fields/cyber-security/cyber-range/>). Responsible for the architecture with **Python 3**, **Docker**, and **OpenStack**.
- Security analysis and comparison of different mobile computing platforms (Android vs. iOS vs. BlackBerry vs. Windows Phone).

Network

- Development of active measurement probes monitoring network quality of telecom companies.
- Arbitrary measurement campaigns (throughput, connection set-up tear down, etc.)
- Based on **Python 3** on low-cost embedded devices (UpBoard - <http://www.up-board.org/>)

Miscellaneous

- Architectural, technical advisor in several national and EU projects (e.g. Sauron - <https://www.sauronproject.eu/>)
- Participant and **Co-Author of ETSI ISG QKD**, <https://portal.etsi.org/tb.aspx?tbid=723&SubTB=723>), main topics: QKD Network System Integration and **SDQN** ("Software-defined quantum networks").
- Responsible for Unit's software quality and continuity (e.g. software development chain using **GitLab**, **Redmine**, **CI/CD** with **Jenkins** and Automatic Software Quality Analyse with **SonarQube**)

1998 – 2002 Klagenfurt, Austria

SOFTWARE ENGINEER SER GMBH

- Workflow engine frontend integration into MS Office products.
- Workflow Client Framework development in **MFC C++** as **COM** library.
- Low-Level extensions (Windows Main Loop) in **Visual Basic** for rapid development of GUI frontends.

- Responsible for the DMS (Document Management System) GUI Frontend in **Visual Basic** and **C/C++**.

1997 – 1999 Biel/Bienne, Switzerland

ENGINEER SAP AG SCHWEIZ

- Internship at the system administration at SAP Biel/Bienne.
- Problem-solving, solution-development for local problems at the branch office in Suisse.
- Mainly networking issues in Windows/Unix/Linux environment.
- **Shell scripting, network monitoring.**

1991 – 1994 Vienna, Austria

ENGINEER OMV AG

- Member Information Department of Austrians Petroleum Company.
- Inventory administration of PC, Printers and other devices connected to the company's network.
- **Visual Basic** for small GUI applications.

1988 – 1989 Klagenfurt, Austria

ENGINEER BKS BANK FÜR KÄRNTEN UND STEIERMARK

- Part of the System administration team of a Bank.
- Helper programs in **Turbo Pascal** and **dBase**.

● EDUCATION AND TRAINING

1990 – 2005 Klagenfurt am Wörthersee, Austria

MASTER OF ENGINEERING AAU University Klagenfurt

Address Universitätsstraße 65-67, Klagenfurt am Wörthersee, Austria | **Website** www.aau.at

● LANGUAGE SKILLS

Mother tongue(s): **GERMAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2
SLOVENIAN	A2	A2	A2	A2	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

Modern C++ | Python | Android programming (Java) | Qt | CI/CD | GitLab | Security and Network Management | Linux | UNIX Shell script | Quantum Key Distribution | Relational Database Systems | RESTful Webservices | CICD tools(Jenkins GitLab CI) | SonarQube | Docker containers | VirtualBox | Virtualization (VMware vSphere VMWare vSAN) | Git | JSON | XML | SQL | Java | HTML | CSS | GitHub | PHP | C++ | C | MySQL | Object-Oriented Programming | JavaScript | TypeScript | Tailwind | NodeJS | Vue | React

● ADDITIONAL INFORMATION

DRIVING LICENCE

Driving Licence: AM

Driving Licence: B

MANAGEMENT AND LEADERSHIP SKILLS

Project Management

- Leadership competence due to experience in managing small, effective teams up to 4-5 members.
- Involvement in resource and budget planning for a department up to 3 years ahead.
- Certified SCRUM Master.