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Summary

Seasoned, versatile and extremely prolific engineer and manager. Highly appreciated by customers and collaborators. Strong track record of evangelism, successful product development, sales and customer interaction. Entrepreneurial attitude with a strong focus on users and Getting Things Done.

Broad background in Applied Mathematics, Mechanics, Aerodynamics, Electronics and Software Engineering. Multilingual with extensive international experience. Highest honors PhD degree and hands-on postgraduate studies.

Keep it Simple and Straightforward!

Employment History

2010–present Self-employed, [KISS Technologies GmbH](#), Adliswil, Switzerland. The motto stands for *Keep it Simple and Straightforward*.

Together with its partner network, KISS offers consulting, development and training services covering a wide range of technologies.

Between 2011 and 2014 I spent most of my time on FLARM and SafeMINE, see below.

2011–2014 Consultant, later Development Manager, Avionics at [SafeMINE AG](#) and [FLARM GmbH](#), Baar, Switzerland.

FLARM is an award-winning Airborne Collision Avoidance System for General Aviation. The more than 25'000 units sold worldwide to date have avoided countless mid-air collisions and near misses and saved dozens of lives.

Assisted by a hardware engineer and the new CEO (from 2014) and with minimal involvement of the owners, I was responsible for the technical and business development of FLARM and its successor, PowerFLARM.

My achievements at FLARM:

Leadership and representation: Main representative and evangelist of the company at key trade fairs, conferences and pilot training events. PowerFLARM presentations, often as an invited speaker.

Sales: Initiated and drove several high-volume sales projects with Swiss and international customers, including market entry in Chile.

Customer support: Key go-to person handling 95%+ of incoming email and telephone calls. Translation of support issues into long-term product improvements. Responsible for main website.

Product development: Sole responsibility for software development of the new “PowerFLARM Core” which soon became the company’s main revenue source. Successful launch in the US market.

Release management: Leading 10+ software releases including major updates. Strong reduction in the number of bugfix releases due to better tests, therefore vastly improved customer happiness.

Quality management: Ramping up of automated test coverage to 95%+ of the code base. Introduction of pragmatic release checklists. Planning and execution of road vehicle and flight tests.

Technical Writing: Main author of core User Manuals and several Application Notes and Interface Documents.

Miscellaneous: Participation and lead in several Search and Rescue events for missing aircraft. Investigation of aviation accidents based on FLARM flight recordings.

I also made one key contribution to SafeMINE, a FLARM spinoff which was acquired in 2014 by the Swedish conglomerate Hexagon.

Winter 2010/2011 Sabbatical. I went for three months to South America to fly a high-performance glider in the challenging environment of the Andes. I took immersion type Spanish classes in Chile and Argentina.

2005–2010 Member of Engineering Staff, Google. I spent three initial months at the corporate headquarters in Mountain View, California and then worked out of the Zürich office.

Besides being the leading Search Engine, Google offers a vast number of products for communication, business process improvement and geographic information. Google is known for its highly selective recruitment process.

My most notable achievement at Google is the [Flight Simulator](#) in Google Earth. I initiated the project, pitched it to the Founders and led three full-time engineers during the development phase. My key technical contribution is a fully configurable aerodynamics model for fixed-wing aircraft.

Other achievements:

- A petabyte scale internet archive.
- Search quality improvement by analysis of WWW connectivity graph.
- C++ standardization.
- Computer Vision techniques to detect roads in aerial imagery. The algorithms were applied to large scale Google imagery databases to accelerate the company’s mapping processes.

2003–2005 ELITE Simulation Solutions, Dübendorf, Switzerland. I started as a software engineer and was promoted to Director of Research & Development in 2004.

ELITE is a manufacturer of professional Flight Training Devices qualified for use in formal pilot training serving a world-wide market.

My contributions were essential to the success of the [PC-9M](#) simulator project, the company’s flagship product, and many smaller projects:

- Integration of the aircraft manufacturer's aerodynamics model for the PC-9M FTD.
- Development of a highly accurate aerodynamics model for the [Diamond-ELITE DA42 trainer](#).
- Integration of original avionics devices into the simulators (Garmin G430 and G1000, Honeywell KLN900).
- Development of a new type of electromechanical control loading systems based on linear motors.
- Planning and execution of Flight Tests for simulator tuning and validation (from Cessna to Beech King Air).
- Requirements specification and liaising with external partners like aircraft manufacturers, hard- and software suppliers, aircraft parts manufacturers.

2001–2003 Engineering, AMST Systemtechnik GmbH, Ranshofen, Austria.

AMST is one of only a handful of high-tech companies in the world capable of building [Human Centrifuges](#).

I used state-of-the-art convex optimization algorithms in internal applied R&D projects.

1996–2003 Lecturer, Salzburg University. I taught courses for Mathematics and Computer Science students. Subjects included Computer Graphics, Mathematical Software, Calculus, Topology, Discrete Mathematics, Number Theory. I fondly remember a lot of positive and motivating student feedback on my teaching.

1998–2001 Researcher, Salzburg University.

Funded by the Austrian Science Fund, I wrote my PhD thesis in Combinatorial Geometry. After the thesis was completed, I switched into Random Number Generation (RNG) and Cryptography. I implemented a comprehensive RNG test suite, wrote a fast and compact Open Source [AES \(Advanced Encryption Standard\) implementation](#) and gave talks at international conferences.

1996–1997 Systems Engineer, Dept. of Computer Sciences, Salzburg University (50%).

After finishing my Master's degree, I spent a year pioneering the introduction of Linux/UNIX systems at Salzburg on a part-time basis beside my PhD studies.

Academic History & Postgraduate studies

2014–2015 ForWind Academy Oldenburg; Postgraduate course in Technology and Management of Wind Power Plants.

1996–2000 Salzburg University; PhD in Mathematics. PhD awarded with the highest possible honors *sub auspiciis praesidentis*.

1991–1996 Salzburg University; Mathematics and Computer Sciences. MSc in Mathematics, July 1996

Random facts

- In 2010, I piloted a 650km gliding flight (i.e. in an aircraft without engine) covering Switzerland and all of its neighbouring countries.
- One of my [fractal images](#) was used chosen by [Benoît Mandelbrot](#) as the cover image for his book *The Misbehaviour of Markets*.
- On average since 1952, only about 17 students per year graduated with the [sub auspiciis praesidentis](#) honors in Austria.
- To fill a gaping hole in the ISO C++ Standard Library, I wrote [Proposal N1925](#) to add networking functionality to the language.

Languages

I like to study languages took various “immersion” type language courses. Besides my native German, I speak fluent English and French. I speak Spanish on an advanced level and, given a dictionary, I can deal with Italian and Russian.

Honors and Awards

- 2014: FLARM wins the [AEROSUISSE AWARD](#).
- 2013: SAFEmine AG wins the Export Award by [Switzerland Global Enterprise](#).
- Several peer and manager bonuses awarded in Google. Winner in a programming challenge to solve Sudokus.
- 2001: PhD awarded [sub auspiciis praesidentis](#).
- 1994: Award by the mathematics department for outstanding students.

Publications

Refereed papers

- *A note on the spectra of certain skew-symmetric $\{1, 0, -1\}$ -matrices*. Disc. Mathematics **258/1–3** (2002), 339–346.
- *The upper bound conjecture for arrangements of halfspaces*. Beiträge Algebra Geom. **42** (2001), no. 2, 431–437.

Working papers

- *Networking proposal for TR2*. ISO/IEC JTC1/SC22/WG21 (C++ Standards Committee) mailing (2005).

Theses

- *On the Upper Bound theorem for convex polytopes*. MSc thesis, Salzburg University (1996).
- *Counting certain covectors in oriented matroids*. PhD thesis, Salzburg University (1999).

Other

- [Im Reich des Kondors. Segelfliegen](#) 2/2014, p. 46ff.

Interests

I enjoy music, cinema, reading good books and various sports (jogging, bicycle, mountaineering). I have a tradition of participating in cross-country skiing races. I love to create [fractal images](#).

I'm an avid glider and power plane pilot with flights in four continents so far. Before the birth of my son, I used to work as a volunteer glider instructor.

Given that the underlying physical principle of glider flight and wind power plants is the same, I have a strong interest in wind power. I have an investment in a [High Altitude Wind Power](#) company.