Ian Leiman

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Key skills

- Senior Software and Hardware system design expert with 3 decades of hands-on R&D experience.
- Full stack software and firmware development with many different computer languages (C, C++, Python, Java, javascript, PHP, Perl, Lisp, assembly, Pascal, PL/M, BASIC, Fortran, Erlang etc), operating systems, platforms and tools for many different CPU, NPU, DSP, MPU targets.
- The entire hardware development process and all the tasks involved from requirements to manufactured products, customer support and product maintenance.
- Agile & lean development, project management and working methods in a global organization.
- Managing development projects and leading large multicultural and multinational development teams on a global scale.
- Developing high-availability carrier grade networking equipment and datacenter systems (SW & HW)
- Telecommunications and networking technologies and protocols, including but not limited to IPv4/v6, MPLS, 2/3/4/5/6G wireless.
- Commissioning, configuration and management of network routers and switches, Cisco and Juniper CLI
- Linux porting, building, installation and management locally and remotely in data center servers & embedded systems
- Windows 10/11 and all M/S Office tools, installation, administration, and daily usage
- Working remotely, hybrid or at offices, either from home or at any office or lab anywhere and able to travel

Current position

Since 2024
Software Architect, Nokia Mobile Networks R&D, Espoo, Finland

- Developing software architecture & technology for the future 6G Nokia AirScale Radio Base Station products
- C++ on Nokia Reefshark System on Chip devices containing CPUs, DSPs, ASIPs, baseband & AI accelerators

Previous Work History

2012 – 2024
System Architect, Ericsson, Jorvas, Finland

2016 - 2024

- SDI3: System and hands-on development of gen 3 datacenter equipment and data/control network manager. COM-CLI, Erlang, Linux, ZebOS, REST API, Redfish, IPMI, Netconf, Arista SLXOS & EFA, remotely managed HPE and Dell servers (iLO, iDRAC). Java based test automation framework. Build and maintain test system datacenters.
- SDI2, SDI1: System and hands-on development for the gen 1 and 2 datacenter management systems. Java, REST API, web-based GUI. Jira, Git, Eclipse, Maven, Jenkins, Gerrit, etc… Lot of automation scripting in Python
- System development for the datacenter networking. 3 Tbps L2/L3 ToR switches using 100/40/25/10 GbE optics. Protocols and technologies used include OpenStack, Open Daylight, OVDSB, VxLAN, etc..
- Development, commissioning and management of datacenter functional test systems, Java-based automated testing

Router 6000 Program, 2014-2016

- Developed the hardware architecture for a portfolio of several router products - from small footprint 30 Gbps cell site routers to large scale 2 Tbps modular high-availability systems. I wrote specifications and requirements in co-operation with international teams working in North-Europe, USA and China. Lot of travel and long distance communications involved. The router HW platform was based on merchant silicon L2/L3 switching devices, FPGA's and multicore ARM processors. Router software platform was 10M lines of c/c++ code on Linux.

Router development for Ericsson Radio Base Station system (RBS6K), 2012 - 2014

- Developed HW architecture for several base station integrated router products, which were based on Network Processors (NPU) and embedded multicore CPU's.

Managed the ODM development and manufacturing of a router product done in Taiwan from start to successful completion of the project in 12 months. Managed chip suppliers. Coordinated firmware and low-level software development done at multiple sites and managed HW logistics for prototypes.

2000 – 2012
Tellabs (later Coriant, then Infinera, acquired by Nokia 2024), Espoo, Finland
Senior Principal Engineer, *Product Planning & Systems Engineering*
- Developed the HW architecture and technology for Tellabs Routers 8660, 8630, 8611, 8609, 8605. This included the chassis, power fans, 8660/30 line cards and interface modules. The hardware contained ASICs, FPGAs, NPUs, CPU's, framers, PHY-chips, power and timing circuits, high speed backplanes.
- Router software platform was coded in C and running over custom RTOS on PowerPC (QUICC) later migrated to Linux.
- Coordinated the HW maintenance for Tellabs 8100 system (modular, high-availability TDM/PDH/SDH XC
- Managed co-operation with Nokia Networks for co-developing 3G Radio Access products (ATM-based).

1989 – 2000 at **Nokia Networks**, Helsinki region, Finland
Project Manager, Radio Access R&D, *WCDMA (3G) base station development*
- Nokia WCDMA (3G) Digital Baseband Processing Unit, contained ASICs and DSPs
Section Manager*, Access Networks R&D, HW competence center*
- ATM-based IAD and DSLAM, contained ASICs, FPGAs, CPUs
- Line manager for a team of 20 HW engineers
Development Engineer*, Nokia Data Communications, Modem R&D*
- Developed complete xDSL wireline modem products, including transmission DSP algorithms and DSP microcode, OAM software by C. Developed a platform ASIC for modems.

Apr. 1992 - Jun. 1993
Research Assistant, *University of Washington at Seattle, USA*
- During a 12-month study leave from Nokia financed tuition by developing graphical user interfaces for network-accessible medical imaging databases. Coding in C on Unix-backend and relational SQL database, X-windows/Motif GUI.

1986 - 1989
Development Engineer, *Helvar OY, Finland*
- Hardware and firmware development of Intel 8-bit embedded micro-controller systems for several new controller system products.

Education
- 1993 Post-graduate studies at University Of Washington, Seattle, USA
- 1990 Master of Science in Electrical Engineering, Helsinki University of Technology, department of Electrical Engineering ("Aalto University" since 2010, https://www.aalto.fi/en), Finland

Other…
Patents
- EP2661163 (A1) "Device and insertion unit thereof"
- EP2661162 (A2), "Equipment provided with one or more plug-in units"

Languages
- Fluent spoken and written English
- Finnish is my native language
- Swedish, German, French

Hobbies
- Technical scuba diving, underwater photography (https://leiman.kuvat.fi/kuvat/Sukellus-SCUBA/, https://www.youtube.com/@IanLeiman), skiing, golf, badminton, fitness training
- Python & Javascript development for private projects: examples https://github.com/eianlei,
- maintaining several websites (WordPress), hacking WP plugins in PHP, eg. https://sukellus.ianleiman.com/
- Chairman of board for Tapionniitty OY (company that owns an apartment complex in Espoo)