



CV - Robin Moll Hjort

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Employments

FPGA & ASIC Design Contractor

www.WorkingFPGA.dk 2023 • present

Strategic Solution Architect

Silicom Denmark 2021 • 2023

SoC Architect

NXP Semiconductors • Munich 2018 • 2021

Senior FPGA Developer & Team Lead

Bruel & Kjaer S&V 2009 • 2017

Senior FPGA Architect & Developer

IPBlaze [startup] 2005 • 2009

Liaison to Customer R&D [relocation]

Nortel • Canada [6 months] 2001

ASIC Architect and Designer

Vitesse Semiconductors 1998 • 2005

HW and FPGA Designer

DSC Communications 1997 • 1998

Education

MSc [Electronic Eng.]

Tech University of Denmark 1991 • 1997

Languages

Danish [native] • Swedish [fluent] •
English [proficient in spoken and written]

20+ years of expertise in FPGA & ASIC

with a passion for creating, assisting and communicating

Faced with a task, I will **eagerly and ardently** summon all my **creativity**, my **analytic thinking**, my **sense for details**, and my extensive digital design expertise into a search for a superior solution.

Through my **deep understanding of digital design** and its RTL counterpart, I deliver high-quality, innovative, and constraint-aware implementation of complex high-speed digital designs. By understanding the resources on hand and driving the tools to utilize them as expected, I **design FPGAs effectively**.

I have **architected several deployed FPGAs and ASICs** and contributed extensively to feature definition, system partitioning, block design, verification, and customer documentation. I have worked on communication FPGAs and ASICs for telecom, automotive, and Ethernet processes. I have been part of the architect team on market-leading, high-performance automotive SoCs.

Combined with my **persistent eye for quality**, I have always enjoyed the role of **technical cornerstone** in device developments; a highly valued role that allows me to spend a significant part of my time on **coordinating, helping and training** close colleagues as well as internal and external customers and partners worldwide. It's also a role that fuels the logical half of my brain through exciting system analyses and root-cause challenges.

My roles often require **careful communication** inside and outside the organization. I build **strong relations** based on respect and confidence. Through focused listening and all-round utilization of my **analytical skills**, I quickly gain a good understanding of the context and identify the central aspects. I **strive to empower** people through encouragement and ownership.

Professional skills

- digital design
- system design & HW architecture
- communication
- technical coordination
- documentation
- support and training

Personal skills

- team player
- self-driven
- analytical
- leadership
- can-do attitude
- thinking out of the box

Skill Set

System Design

Frontend Design

Backend Design

Testing

Technologies

Protocols & Standards

Design Methodology

Programming Languages

HW & device architecture • requirement specification • design specification • interface specification • SW/HW partitioning • redundancy • testability

block design • RTL • high-speed design • low-latency design • reusability • resource sharing • packet processing • stream processing • SW interfaces • high-speed interfaces • I/O planning • clock domains • synchronization • reset • embedded RAM • external RAM • IP core integration • IP core development • embedded processors • FPGA prototyping • data acquisition • filtering

synthesis • STA • timing closure • floor planning • FPGA routing • scripting • power analysis

test planning • simulation • regression testing • randomization • reproducibility • generic test benches • design for testability • design for debugging • reusability • wireshark • signal tap • signal probe • hands-on lab work • logic analyser • oscilloscope • power supply stability • signal integrity • gate level simulations • test vector generation • design of laboratory test tools • system demos

FPGA • CMOS ASIC • Intel-Altera • AMD-Xilinx • DSP and AI engine IP • NoC

Ethernet • PTP-1588 • TCP/IPv4 • PCIe • AXI • CAN Bus • SONET/SDH • proficiency in standards and protocols in general • ISO 26262 • proprietary protocols

reusability • structured development • quality assurance • documentation • specification • guidelines • reviews • training • reproducible regression testing • test environment and test bench design • automated documentation • from-spec-to-code generators • requirements management • revision control

VHDL • Verilog • TCL • Perl • Bash • Make • JavaScript • Visual Basic

Professional Experiences

Product Management

- product ownership of a 200 Gbit/s accelerator board for 5G edge and Fintech based on Intel Agilex FPGA with Open FPGA Stack
- pre-sale customer activities
- creation of marketing material

High-Speed Digital Design

- automotive SoC micro-architecture, architectural integration of DSP and AI engines, performance analysis, and analysis and design of functional safety features
- specification, architecture, design, verification, and customer documentation of several deployed communication FPGAs and ASICs: network access for the telecom industry, high-performance, low-latency Ethernet switches, Ethernet switches for the consumer market, and measurement equipment for the automotive industry
- architecture, design, and verification of IP cores with prototyping in FPGA [TCP/IP offload engine]
- STA on several designs
- experienced in laboratory work through validation and debugging of interface timing, signal integrity, and power supply quality
- familiar with high-speed PCB design challenges

Problem-Solving & Sparring

- root cause analysis at system and chip level [defects as well as performance]
- pre-silicon performance analysis of sub-systems
- resolving design constraint violations [e.g. performance]
- a valued sparring partner for design, architecture, implementation, and root cause analysis
- identifying viable workarounds for device defects and technical modifications to compensate schedule delays

Liaison & International Work

- positions in multinational companies with a close working relationship between teams and individuals internationally
- technical liaison to sub-contractors, third-party IP providers, partners, and in-house stakeholders [backend design, frontend design, HW design, SW design, verification, validation, production, systems, applications, documentation, customer support]
- close working relationships with customers including 6 months' relocation to customer's premises
- customer support through correspondence as well as face-to-face
- remote and on-site system-setup and problem-solving of customer equipment
- delivering university lectures on standardization and RTL Design

Design Methodology

- established ASIC and FPGA design methodology and automated design flows
- creation of highly sophisticated FPGA test environments for regression verification and laboratory work
- conducted training in tools, methodology, and flows
- creation of Code generators for SW register interfaces – from specification to VHDL, TCL, C++, RTF
- initiatives in product quality improvements