

Jero Sánchez García

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WORK EXPERIENCE

NVIDIA

Aug. 2023 – Aug. 2026

Networking Software Engineer

Roskilde, Denmark

- Developed software in Rust, C, and C++ for heterogeneous CPU/GPU systems, designing communication mechanisms around SmartNIC/DPU and accelerator architectures for HPC, AI, and data-center fabrics.
- Designed, implemented, and evaluated a SmartNIC-offloaded mechanism that collapses multi-step RDMA communication into one round trip, reducing latency 43% and increasing throughput 33% vs. RDMA.
- Built reproducible benchmarking workflows that surfaced hardware performance constraints, raising awareness and helping guide system-design decisions for RDMA- and GPU-centric communication paths.
- Containerized and ran HPC networking applications on shared clusters, supporting reproducible execution across heterogeneous CPU/GPU environments.

SAL Research Group, Almería University

Mar. 2022 – Sep. 2022

Postgraduate HPC Software Research Fellow

Almería, Spain

- Collaborated with domain researchers to identify computational bottlenecks in OptiPharm, a drug-discovery application, and translate scientific requirements into practical performance improvements.
- Redesigned OptiPharm's core computation paths to exploit CPU and GPU parallelism while preserving numerical stability and prediction quality, improving molecular-search results.
- Documented the implementation, validation process, and experimental methodology, contributing to a peer-reviewed publication reporting the performance improvements and scientific impact.

EDUCATION

Aalborg University

Nov. 2026 (Expected)

PhD in Computer Science

Copenhagen, Denmark

- Industrial PhD with NVIDIA focused on low-latency HPC networking, RDMA, SmartNICs, and network offload. Develops systems software, mentors MSc projects, and delivers guest lectures in systems and networking.

A Coruña University

Jun. 2023

MSc in Computer Science

A Coruña, Spain

- Master's degree focused on high-performance computing, parallel programming, and performance engineering. Optimized scalable scientific workloads using MPI, OpenMP, and CUDA on CPU/GPU systems.

Almería University

Jul. 2021

BSc in Computer Science

Almería, Spain

- Built a foundation in systems, algorithms, and software engineering, with a specialization in high-performance computing and networking. Received the Best Dissertation Award.
- Minor in Business Analytics, Hochschule der Medien, Germany.

SELECTED SYSTEMS RESEARCH

- *Edge GPU Virtualization for Cost-Effective Deep Learning Inference in Retail Deployments* — COINS 2026, accepted
- *Real-Time Post-Quantum Secured Image Pipeline on NVIDIA BlueField-3 DPU* — ICA3PP 2026, under review
- *ActiveRDMA: SmartNIC-Offloaded, Multi-Step RDMA Operations* — ICPP 2026, accepted
- *Protocol Buffer Deserialization DPU Offloading in the RPC Datapath* — SC24 Workshops, 2024

TECHNOLOGIES & LANGUAGES

- **Programming languages:** C, C++, Rust, Python, C#
- **HPC & parallel computing:** MPI, NCCL, OpenMP, CUDA
- **Networking & distributed systems:** RDMA, RoCE, InfiniBand, SmartNIC, DPU, network offload, DOCA
- **Performance engineering:** Profiling, benchmarking, latency and throughput analysis, scalability.
- **Systems and architecture:** Linux, concurrent & parallel programming, computer architecture, NIC microarchitecture, software/hardware co-design, POSIX
- **Software engineering:** Git, code review, technical documentation
- **Languages:** Spanish, English