

PROFILE

Delivering mission-critical performance with simple, elegant, secure, high-reliability systems. At hyper scale or down to the metal, simplicity is the key to successful system design.

EDUCATION

- **M.Eng.** in Computer Engineering. INSA Lyon, France, 2007
- **B.Eng.** in Computer Engineering. IUT de Belfort, France, 2004

EXPERIENCE

Oct. 2020 – Current **Apple, Inc.** Cupertino, CA
Systems Architect, Maps 3D Vision Team, Sensor systems <http://www.apple.com>

- Led development of new generation vehicle and backpack ground truth sensor systems
- Oversaw and engaged in mechanical, hardware, and software realms throughout the lifecycle
- Designed custom compute units for ground truth sensor systems
- Designed locked-down embedded Linux systems with full disk encryption, secure boot, and remote attestation
- SME for compute, battery, and wireless connectivity subsystems among others
- Responsible for EMI testing and certification

Apr. 2016 – Oct. 2020 **Apple, Inc.** Cupertino, CA
Operations Architect, Maps 3D Vision Team, Software infrastructure <http://www.apple.com>

- Designed a next-generation compute infrastructure for high-volume 3D Vision processing using Mesos
- Built a custom high-throughput, massively parallel Mesos scheduler to handle large job volumes (10M+)
- Designed a large-scale data access infrastructure to support a global team of users
- Designed and tuned geographically dispersed, realtime, machine vision processing services
- Deployed Hashicorp Vault at scale using FoundationDB as the key/value store, and a custom replication overlay

Jan. 2012 – Apr. 2016 **Apple, Inc.** Cupertino, CA
Operations Architect, Maps Operations Team <http://www.apple.com>

- Part of the team that designed, built, and launched the infrastructure powering Apple Maps
- SME for InfiniBand, GPFS, network and Internet routing matters, DNS GSLB and CDNs
- Designed, deployed, and maintained large-scale FDR InfiniBand clusters
- Designed, deployed, and maintained large-scale multi-PB GPFS storage clusters
- Performed end-to-end application troubleshooting with developers and QA teams
- On-call for customer-facing production support
- Assumed release engineer role for roll-out of new releases of Maps services, and designed the roll-out process
- Coordinated vendor activities for both support and new developments
- Led long-running deep-dive troubleshooting and FA/RCA processes with vendors
- Ran proof-of-concept labs for qualification of new hardware and/or new configurations
- Researched data transfers over long fat pipes to build a high-speed, high-efficiency solution

Aug. 2009 – Nov. 2011 **INTM** Lyon
OpenSource Systems Engineer <http://www.intm.fr>

- Developed a custom Debian-based Linux distribution aimed at scientific workstations and clusters for EDF
- Integrated OFED and GPFS for deployment on a 1500-node HPC cluster in replacement of the vendor OS
- Provided assistance to other teams on infrastructure projects (storage, authentication, printing, virtualization)
- Developed new features for the FAI deployment system to enhance automated partitioning & filesystem setup

Feb. – Aug. 2008

BT Infrastructures Critiques

Lyon

Datacenter Tooling Engineer

<http://www.bt.com/france>

- Developed and integrated custom, large-scale, multi-NOC monitoring tools (Nagios-based)
- Integrated monitoring and asset management to source host and network topology information
- Rewrote part of the central event handling and event correlation code (SEC)

2005 – 2007

Linbox FAS

Metz

Product Manager

<http://www.linbox.com>

- Designed the Linbox IP telephony solution (LIPS), based on Asterisk and SIP (multi-site, redundant)
- Integrated LIPS into Linbox' centralized, web-based management console
- Designed scalable/fault-tolerant VPN solutions, with OpenVPN and OSPF
- Reverse-engineered the FirstClass groupware on-disk data store to write a bulk migration tool

2004

Sirius Technologies

Metz

Software Engineer

<http://www.siriustech.org>

- Designed an all-in-one, turn-key, Linux-based workgroup server solution from the ground up
- Productized the solution with an automated deployment platform and a datacenter-hosted solution

OpenSource projects and activities

- Wrote the forked-daapd DAAP multimedia streaming server. First shipping software to use GCD on Linux (2010)
- Wrote the potted daemon to handle various hardware features of Mac laptops on Linux
- Worked on the rEFIt boot menu and EFI runtime in Debian, porting both to 64bit x86
- Ported TiLP to Mac OS X 10.1 to 10.3; Cocoa GUI and IOKit-based USB drivers
- Contributed to the Debian MIPS port: Linux kernel patches, ARCS bootloader maintenance
- Contributed to the SANE project: Linux integration (udev, ConsoleKit), IPv6 support, mDNS service discovery
- Emeritus member of the Debian Project, producer of the eponymous Linux distribution (2000 to 2012)

SKILLS

Systems	Unix-like OS (esp. Debian), storage & backup systems, monitoring, SSO
Platforms	x86, ARM, MIPS, PowerPC, RISC-V. Nvidia Jetson platforms, AMD SoCs. UEFI, device tree
Networks	IPv6, Wireguard, BGP, OSPF, load balancers, failover switches, firewalls, QoS. InfiniBand fabrics
Storage	S3, blob storage, GPFS, SRP, iSCSI, multipath, XFS, ZFS
Databases	PostgreSQL, MySQL, SQLite, FoundationDB, Cassandra
Services	Standard Internet services, VoIP (SIP, Asterisk), PostgreSQL, PgCluster, MySQL, Mesos
Development	Unix-like and embedded platforms, assembly, C (gcc & Clang), C++, Objective-C, Go, Perl, SQL, PL/SQL, POSIX Shell
ECAD & MCAD	Fusion 360, KiCAD

MISC

- Languages: English (fluent), French (mother tongue)
- (2006 – 2010) President, founding member, Association Debian France (non-profit)
- (2000 – 2012) Contributing member, Software in the Public Interest, Inc.