

Skills Summary

- ✓ **Cloud Systems Architecture (5 years)**
 - Layered, event-driven, micro-services architectures for highly available systems; architecture&design patterns; requirements analysis
 - Automated delivery of scalable services with cost/resource optimization, versioned APIs and IoT friendly protocols
- ✓ **Technical Teams & Projects Management (12 year)**
 - Leadership and motivation of technical teams, overseeing projects, releases and customer accounts
 - Hiring, performance appraisals, tasks tracking, planning, milestones and progress reporting
- ✓ **Complex Telecommunication Electronic Systems Design (15 years)**
 - Architecture of electronic DSP-based cards and SoC with hardware accelerators and embedded real-time software
 - Production of Specification, functional requirements, firmware/software interface documents; architecture, sequence graphs

Education

- ✓ **Engineer Degree, SUPAERO (Toulouse) : Telecommunications, Electronics and Real Time Embedded Software**
- ✓ **Master in Micro-electronics Circuits and Micro-systems Design, SUPAERO / Paul Sabatier University (Toulouse)**

Development Tools

Methodologies : AGILE, UML, DDD, V-Model; System analysis, architecture&design patterns, SW components design for maximal reuse
Languages : Python (expert), C/C++ (expert), Java, TypeScript, HTML5, Groovy, Unix Shells, Matlab, Pascal, VHDL, Maple, LaTeX
Virtualization : Docker (expert), Kubernetes, HA-Proxy, KVM, VMware, VirtualBox, chroot, schroot
Frameworks : FastAPI (expert), SpringBoot, Angular; SQLAlchemy/PostgreSQL, JPA/Hibernate, liquibase; NumPy, SciPy, Pandas
Technologies : GPS/GNSS, LTE, WIMAX, TCP, UDP, CoAP, HTTP(S), Kubernetes, Terraform, , ALB, NLB, CloudFront, ...
Environments : Spyder, Jupiter, VS code, IntelliJ, Eclipse, gVim, Lazarus, Glade, QtDesigner, Delphi, Dia, Draw.io, MS-Visio, ...
Version Control : GIT (expert), GitHub, GitLab, Jira, BitBucket, Android/repo, SVN, BZR, ClearCase, CVS, Collabnet, YouTrack
CPU/DSP/μC cores : Cadence Fusion, Verisilicon, ZSP5x0, Synopsys Arc, NXP CoolFlux, C62x, C64x, DM67x, ARM7, ARM9, 68K/Coldfire

Professional Experiences

Nestwave, 09/2015 – 07/2024 (Em-RT & Cloud SW Arch, Multi-Threading; Python, Java, C; DevOps)

- ✓ **Co-founded Nestwave** where I worked as **Engineering Director**, increasing valuation and securing multimillion acquisition by NextNav
 - Established clear objectives, creating a happy & motivated team, resulting in +35% of productivity & -25% of delivery times
- ✓ Acted as **Cloud Software Architect**, designing & delivering first version of a **4 micro-services cloud MVP** within **4 months only**
 - Produced solution architecture blueprints using functional decomposition and DDD after breaking down the complex problem of cloud based IoT Devices localization. Ensured a suitable end-to-end solution for targeted business and granting an SLA of 99.999%
 - Designed low latency cloud service architecture using C-DLL/SO within Python code. Ensured response time less than 100ms.
 - Created use case, communication, sequence and interaction diagrams. Specified reusable SW components. Enforced git submodule
 - Led 4 developers cloud team setting goals & milestones, caring of security requirements. Enforced FastAPI framework & clean coding
 - Directed AWS migration of cloud infrastructure using Kubernetes, Terraform, Ingress, ALB, NLB, CloudFront, HA Proxy; reducing deployment times by 40% and enhancing scalability by 75%. Standardized workflows to enhance efficiency
 - Adopted CI/CD methodology and automated unit tests, producing superior quality code, reducing deployment time by 50%
 - Introduced issue tracking system and code review practice, streamlining bug resolution and resulting in -30% post-release bugs
 - Implemented several machine learning models improving positioning algorithms and multi-path mitigation using state of the art libraries like NumPy, Pandas, SciPy and algorithms like Least Square / Pseudo Inverse, Gradient Descent, Newton-Raphson
- ✓ Acted as **Embedded Real Time Software Architect**, defining a software architecture & driving MVP achievement within **6 months only**
 - Wrote system requirements, use case definitions, interfaces specification, user manual, test plan documents.
 - Defined layered FW architecture. Produced interaction overview, state machine and timing diagrams
 - Designed a robust FW architecture leveraging insights from Algorithms team. Developed a cutting-edge PoC showcased at Mobile World Congress in Barcelona 2018, demonstrating -80% in power consumption and +85% in latency
 - Reduced by 50% MIPS & memory footprints by giving hint on algorithms improvement to fit DSP architecture constrains

NXP Semiconductors, 12/2013 – 08/2015 (Em-RT SW Arch, Bare-Metal, Multi-Tasking; Matlab, C)

- ✓ **DSP FW architect** responsible of audio smart amplifiers for handsets and tablets
 - Reworked architecture specifications of SoC and DSP FW: System requirements analysis, MIPS budget estimation
 - Revamped work process, designed internal tools for accelerating development and validation by a factor of 4
- ✓ Successfully conducted process and attained ISO9001 certification and process improvement recognition

SEQUANS Communications, 08/2005 – 11/2013 (Em-RT SW Arch, Multi-Threading; Python, C, C++)

- ✓ **Senior solution engineer managing** a 4G host application for strategic big accounts
 - Performed program management. Tracked development & planning tasks and milestones.
 - Helped customer Motorola to produce a phone optimized for Firemen usage in less than 12 months.
- ✓ **Project manager** on WIMAX program, overseeing SW releases for middle priority customers
- ✓ **DSP μCode team leader** for the WIMAX and LTE PHY & MAC SoC projects
 - Managed the teams, ensured releases delivery at time and conducted development and issues status reporting.
 - Produced architecture and HW-SW interfaces specifications
 - Led co-simulation task to ensure complete solution testability before tape-out. Debugged post rooting DSP timing issues

Open Source Community, 09/1999 – 07/2024 (Compiler internals, Code Generation; Excellence Mindset)

- ✓ **Head of Free Pascal & Lazarus team in the Debian Project**, packaging programs for multiple platforms
- ✓ **Free Pascal Compiler and Lazarus IDE projects member** (with commit rights): ported FPC to Sparc64, Fixed GTK3 bindings

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