Mazen NEIFER
System Architect
ISAE-SUPAERO Diploma

Born on [redacted]
At [redacted] (France)
French Nationality

Cloud Solutions
System Architecture
Real Time Embedded Software

Skills

- ✓ **Cloud System 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

Diplomas

- ✓ **Engineer Degree**, SUPAERO (Toulouse 1998-2001) : ***Telecommunications, Electronics and Real Time Embedded Software***
- ✓ **Master in Micro-electronics Circuits and Micro-systems Design**, SUPAERO / Paul Sabatier University (Toulouse 2000-2001)

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**, Groovy, Unix Shells, Matlab, Pascal,VHDL, HTML, Maple, TeX/LaTeX
Virtualization :	**Docker (expert)**, **Kubernetes**, **HA-Proxy**, KVM, chroot, schroot
Frameworks :	**FastAPI (expert)**, **SpringBoot**, **Angular**; SQLAlchemy/**PostgreSQL**, JPA/Hibernate, **liquibase**; **NumPy**, **SciPy**, **Pandas**
Technologies :	GPS/GNSS, LTE, IEEE802.16e (WIMAX), TCP/IP, UDP, CoAP, HTTP, HTTPs, PNG, JPEG, MPEG, BT601, BT656, …
Environments :	**Dia**, **Draw.io**, **MS-Viso**, **IntelliJ**, **Eclipse**, **Spyder**, Jupiter, gVim, TI CCS, Lazarus, Glade, QtDesiner, Delphi, Visual C++
Version Control :	**GIT (expert)**, **GitHub**, **GitLab**, Jira, BitBucket, Android//repo, SVN, BZR, ClearCase, CVS, Collabnet
CPU/DSP/µC cores :	**Cadence Fusion**, **Verisilicon ZSP5x0**, **Synopsys Arc**, NXP CoolFlux, C62x, C64x, DM67x, ARM7, ARM9, 68K/Coldfire

Professional experiences summary

Nestwave, 09/2015 - today (RT-SW Arch, Cloud SW Arch, Multi-Threading; Python, Java, C; DevOps)

- ✓ ***Co-founded Nestwave*** and served as ***Engineering Director*** until its acquisition by NextNav in 10/2022
- ✓ Acted as **Cloud Software Architect** and Cloud Team Manager
  - ***Created from scratch BE services***, *based on* ***FastAPI framework***. Used ***git submodule*** to synchronize **multiple *git* repositories**
  - ***Defined*** **use case**, **communication**, **sequence** and **interaction diagrams**.
  - ***Designed*** **low latency cloud service architecture** using C-DLL/SO within Python code. ***Ensured*** **response time** less than **100ms**.
  - ***Leaded migration to AWS*** of *cloud infrastructure based on* ***Kubernetes***, ***Terraform***, ***Ingress***, *ALB, NLB,* ***CloudFront, HA Proxy***
  - ***Improved significantly work processes*** by introducing CI/CD methodology, issues tracking, code review and unit testing
  - ***Specified*** **reusable SW components** implementing **machine learning models** to improve positioning and multi-path mitigation
- ✓ Acted as **Embedded Real Time Software Architect** and Firmware Team Manager
  - ***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**
  - ***Reduced by half*** **MIPS & memory footprints** by giving hint on algorithms improvement to fit DSP architecture constrains
  - ***Introduced*** **DevOps automation tools**, issues tracking, code review and unit testing. **Improved significantly work processes**

NXP Semiconductors, 12/2013 - 08/2015 (RT-SW Arch, 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 (RT-SW Arch, Multi-Threading; Python, C, C++)

- ✓ ***Senior solution engineer managing*** a 4G host application for ***strategic big accounts***: program management, dev & plan tracking
- ✓ ***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
  - Leaded team and development. Produced **event driven architecture** and **HW-SW interfaces specifications**

ENERTEC, 07/2002 - 10/2004; ATMEL, 09/2001 - 07/2002 (RT-SW Arch, Multi-Tasking; C)

- ✓ ***Embedded real time software engineer*** working on DSP and FPGA based aircraft signals recorder acquisition cards
- ✓ ***DSP architecture junior engineer*** contributing to design, performance analysis and test of a SIMD/VLIW DSP core

Open Source Community, since 1999 (SW Arch, Multi-Tasking; Pascal, C, Make)

- ✓ 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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