

Fernando José Capeletto Neto

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Hi, I am an Engineer since 2009, (but since I was 4y, I had a light bulbs collection :))

From 2010 to 2020 I was an Officer of the [Brazilian Navy](#) of the [Navy Corps of Engineers](#), and I worked for more than seven years in [PROSUB \(Brazilian Navy Submarines Development Program\)](#).

Due to my excellent performance and contributions during my military career, I was chosen by the Commander-General of the Navy to be an advisor to the [Ministry of Science, Technology, Innovations and Communications of Brazil](#), having received formal courtesy references from the [Brazilian Navy](#) and the [Ministry](#).

In 2020 I quit my military career and embraced new challenges as an Engineer in Germany.

Firstly, I was an engineer of an advanced [equipment control and programming \(ECS\) system of automated container terminal equipment](#), providing fleet management automation solutions and efficient operation for port terminals worldwide.

Then, I was an engineer for one of the [leading providers](#) in the field of access to exchanges and trading frontends, with thousands of installations in dozens of institutional clients and several million transactions per day.

At the end of 2022, I conquered a permanent immigrant visa for skilled workers and emigrated to the United States of America in early 2023.

Currently I am Assistance Vice President - Senior Software Engineer in the [Trade Channel Technology division of the most globalized bank in the world](#), with more than 200 years of operation and presence in 95 countries

I have experience throughout the development lifecycle of Systems and Software Engineering: From the design of requirements and architecture; to coding, integration, testing, verification, validation, qualification, customer support, and maintenance.

I am used to collaborating daily using agile methodologies producing testable and efficient code in continuous integration and delivery environments, producing distributed, scalable, customizable, and highly available applications made with cutting-edge technologies.

I have experience in critical real-time systems, with high performance and fault tolerance requirements as the Naval & Defense domain Systems.

During PROSUB, I worked in France for about 3 years at labs and industrial premises from a European leader group specialized in naval-based defense design, development, and integration of whole warships and combat systems. Back in Brazil, in the Brazilian shipyard I oversaw the industrial cycle stages, assembly, installation, qualification, commissioning, verification, testing, and validation for the new class of Brazilian submarines, its systems, and subsystems.

The demand for high precision feedback for this huge industrial lifecycle on a daily (and hourly) basis, led me to build from scratch the **'SisCapela'**, an innovative process and tool that I left as legacy for the Brazilian Navy: [a software system and methodology that integrates and processes data from several shipyard's department, suppliers, and daily building inspections/recordings aiming to control/monitor each step of the industrial life-cycle for each submarine's item during its construction.](#)

The current situation for each of hundreds of thousands of onboard and offboard items (since a screw or cable, until a sensor, or even an entire cabinet, console, equipment or system, as well as its spares and configurations), is projected on hundreds of the submarine's specialized technical diagrams (electrical, electronical, pneumatic, mechanical, hydraulic, etc) that defines a progressive list of submarine's milestones and vital functions (e.g. capability to dive, to drain tanks, to extinguish fire, to navigate, to launch a weapon.. etc). The result is a detailed real-time view of the completeness for each technical diagram, security milestone or vital function according to the daily building situation, empowering the Brazilian Navy on full follow-up of the submarine construction and maintenance at various visualization levels.

This high-precision followup made it possible to detect and prioritize key tasks, through the identification of bottleneck items with pending IVVQ, for the achievement of each contractual and safety milestone and for each vital function in a timely manner. Considering the submarine's natural build difficulties (area, workers and tools limitations, inside a confined space), it was possible also to clearly identify activities prioritization and sequencing, providing precise support for the coordination of industrial activities. The Integrated Logistic Support process was enhanced as well due to wider predictability of logistical needs and planned maintenance procedures, increasing the speed of IVVQ cycles by about 70%, the non-conformities and rework rate decreased by more than 50%, and the whole work evolution more than doubled its speed. Therefore, SisCapela became an essential and powerful tool to provide support to technical coordination activities, verify the requirements' completeness for submarine launching and subsidize the Brazilian Navy authorities for the release of the milestones payments of this billion-dollar contract that is Brazil's Submarine development program.

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I trained the SisCapela use for the Brazilian Navy Inspection Team and demonstrated it to the Brazilian Navy Admirals. Its use became so neuralgic for the Submarine's construction process, that changed the Navy paradigm of how to follow-up a work of vast proportions, complexity, and criticality, persuading the Institution to adopt it as a process until today years after my leaving. This is why affectionately my hierarchical superiors named the System referring to my surname.

Years later, in Germany, I had the insight to produce another innovation: working under a fast pace changing system based on the Agile Methodology and Continuous Delivery/Continuous Integration paradigms, I noticed how incomplete and unsatisfactory the software documentation management is for a code that changes faster than the capability to document it: several branches and versions due to different customers, customizations with a weekly delivery schedule makes extremely hard to document the software its changings: This leads to the slow learning curve of knowledge, lack of documentation and documentation outdated.

Unsatisfied by it, I created for the TBA ([they also gave me excellent recommendations](#)) a process for automatic generation of up-to-date software technical documentation for software under the Agile Methodology paradigm: I proposed the creation of the "**Documentation-as-Code**" paradigm: The software documentation should be handled as code: documentation shall be related to specific versions, branches and updated according to the CI/CD process: To do that we built a component to automatize the document creation process, plugged to the software and its system logs for our distributed system, having the capability to collect/identify the interactions between different components and build UML diagrams on the fly according to the behavior observed during the execution time.

Some of the powerful outcomes: Fix of lack and outdated documentation, speeding up the learning curve for new team members (and reinforcement of the details even for experienced ones), speeding up time to produce documentation (instead of the 'hand-made' one), capability to investigate issues and explore system and software behaviors according to a specific scenario or test (promoting high-level investigation and using diagrams to do that, instead of text logs).

I tirelessly seek for innovative approaches and continuous improvement of products and processes optimization. I am an engineer focused on details, driven by innovation and creativity and extremely eager and interested in the conjunction of the different details of a critical and complex system of systems.

I firmly believe that the experience I gained working during more than 10 years (3 of them in France) in critical and complex systems at the Brazilian Navy, as well as the cutting-edge technologies and the continuous development/continuous integration agile environment that I used to work daily currently in last 2 years in Germany and now in the U.S.A is a valuable key asset everywhere and credentials to any challenge.

I already felt the pleasure of giving immense contributions through innovative solutions creations. I believe that Innovation transforms irreversibly and permanently. The feeling of producing it is indescribable, and I can do it repeatedly.

I am a restless and innovative professional, permanently seeking process improvements and self-development in different topics with a creative and hungry spirit, [always willing to leave my comfort zone, expanding it](#). I pursue this.

Best Regards,



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