



# GIOVANNI STANCAMPIANO

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## TECHNICAL SKILLS

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### Software Development:

- ReactJs, NextJs, TypeScript, Tailwind, Three.js, GSAP
- C++, C, C#, Python, DXL

### Engineering Tools:

- Matlab, TestStand, LaTeX, IBM Rational Doors

## WORK EXPERIENCE

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### **TXT E-Tech:** *System Engineer*

March 2024 – Current

- Design and development of Aircraft Ground Equipment (AGE) for the RIG M345 LFFA, including software development (C# and TestStand), hardware design, and system integration to support automated testing.
- Design and development of test benches and other testing equipment, including the AVBUP project for the C-27J ATR#4 Avionic Integration Rig, a critical asset for testing and validating avionic systems to ensure seamless integration, functionality, and reliability.
- IBM Rational DOORS for creating formal models, development of advanced DXL scripts for process automation, and the ability to create custom templates for exporting from DOORS to Word and vice versa using IBM Rational Publishing Engine tools.
- Authored the Functional System Specification document, detailing the functional requirements for the design, development, manufacturing, and qualification of the C-27J ATR#4 Avionic Integration Rig.
- Developed qualification test procedures and conducted analysis assessments to verify compliance with design requirements and ensure the reliability of the avionic systems.
- Extensive expertise in requirements analysis, traceability management, and advanced DOORS system configuration to ensure performance optimization and maximum efficiency in the development environment.

### **TXT E-Tech:** *Integration & Test Engineer*

September 2023 – March 2024

- Experience in designing and conducting security and reliability tests for avionics systems.
- Test automation to improve efficiency and accuracy
- Avionics communication systems, including protocols such as ARINC 429, MIL-1553, MIL-3910.
- Use of specialized testing tools for avionics systems.

### **Freelance Web Developer:** *FrontEnd & BackEnd*

September 2024 – Current

- Developed modern web applications using ReactJs, NextJs, TypeScript and Tailwind to build responsive and high-performance user interfaces.
- Implemented 3D animations and interactive visual effects using Three.js and GSAP to enhance user engagement.
- Designed and deployed scalable back-end solutions with Python to manage business logic and database integrations.

- Collaborated with clients to deliver customized web solutions, ensuring seamless user experiences and adherence to project timelines.
- Experience with software version control system tool such as GIT

## PORTFOLIO ONLINE

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- [Giovanni's Portfolio \(online-inky.vercel.app\)](https://www.vercel.app/online-inky)

## TEAM PROJECT

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- **Optimization of Turbofan Engine Performance**  
Selected the Pratt & Whitney JT9D-59A turbofan engine for performance enhancement. Implemented the Intercooled Recuperative Aero-Engine (IRA) technology, achieving significant improvements in the thermodynamic cycle's efficiency, thrust, and fuel consumption.
- **Integration of Wave Rotor Technology in Engine Cycles**  
Analyzed the wave rotor technology and its integration into the engine cycle. Leveraged unsteady operating conditions to enhance pre-combustion temperatures via compression waves, followed by expansion waves to moderate the flow temperature. This innovative approach, termed the Wave Rotor Topping Cycle, significantly improved engine performance and efficiency.
- **Design of Hypersonic Waverider Aircraft**  
Developed a hypersonic waverider aircraft leveraging its geometry to generate and ride shock waves. This approach enhances lift, reduces drag, increases range, and improves overall performance. The design capitalized on compression lift, where shock waves close to the lower surface generate high-pressure forces, achieving optimal efficiency at high Mach numbers.
- **Performance Comparison Between Air Turbo Rocket (ATR) and Simple Rocket Engine**  
Analyzed and compared the thermodynamic performance of an Air Turbo Rocket (ATR) and a simple rocket engine. Evaluated the specific impulse of an ATR cycle, assessing the efficiency of using the combustion chamber solely to drive the ATR turbine versus generating thrust in a simple rocket engine with an adapted nozzle.

For more details on these projects, visit my [LinkedIn profile](#).

## EDUCATION

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### Polytechnic Of Turin

Turin, Italy

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| • <i>Master's Degree Aerospace Propulsion System Engineer</i> | 2022 – 2025 |
| • <i>B.S Aerospace Engineer</i>                               | 2018 – 2022 |

**Relevant work:** Study and analysis of major aerospace propulsion systems, including both air-breathing and non-air-breathing engines, with a focus on Air-Turbo-Rocket technology. Skilled in the design and analysis of aerospace components, systems, or vehicles using engineering software like MATLAB and ANSYS. Conducted mathematical simulations (MatLab) of an Air-Turbo-Rocket prototype to verify and compare expected results. Analyzed electric and electrothermal propulsion systems, and performed computational fluid dynamics (CFD) studies of propulsion systems. Specialized in fluid dynamics and gas dynamics related to turbomachinery, including the design and simulation of a hypersonic vehicle (Wave-Rider) using MatLab. Experienced in the analysis and optimization of power gearboxes for aerospace propulsion applications, focusing on performance, efficiency, and reliability in turbomachinery systems. Experienced in structural design, analysis, and material selection for aircraft and spacecraft construction. Knowledgeable in avionics systems.