GIOVANNI STANCAMPIANO

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TECHNICAL SKILLS

Software Development:

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

Engineering Tools:

- Matlab, TestStand, LaTeX, IBM Rational Doors, AutoCAD Electrical, Autodesk Inventor

WORK EXPERIENCE

TXT E-Tech: *System Engineer* March 2024 – Current

- Designed the avionic test rigs for the Eurodrone and C-27J platforms, producing detailed electrical schematics (AutoCAD Electrical), mechanical drawings (Autodesk Inventor), and all related technical documentation, including design specifications and system design document.
- Developed and executed test and qualification procedures for systems designed on both the Eurodrone and C-27J platforms.
- Applied Python scripting to automate engineering workflows, including document generation, data processing, and validation tasks, improving overall productivity in design and testing phases.
- Applied IBM Rational DOORS for formal requirements modeling, developed advanced DXL scripts to automate processes, and configured DOORS environments to enhance traceability and efficiency; also created customized templates for seamless document exchange with Word using Rational Publishing Engine.

TXT E-Tech: *Integration & Test Engineer* September 2023 – March 2024

- Developed test and integration procedures for the LRUs of the C-27J platform, with a particular focus on VHF/UHF radio systems.
- Performed formal integration tests to verify system functionality and ensure compliance with defined requirements.
- Performed troubleshooting activities using tools such as bus analyzers to manage and diagnose signals including MIL-STD-1553, ARINC 429, RS-422, discrete signals, and Ethernet lines.
- Utilized technical test equipment such as RF test sets, oscilloscopes, and multimeters to perform precise measurements and diagnostics on 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

- Giovanni's Portfolio (online-inky.vercel.app)

TEAM PROJECTS

- **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

Polytechnic Of Turin
Turin, Italy

- *Master's Degree Aerospace Propulsion System Engineer* 2022 – 2025
- *B.S Aerospace Engineer* 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.

Giovanni Tavarone