Jean-Pierre Sacha

thejpsacha@gmail.com • (320)-298-6163 • Atlanta, GA

Skills

Solidworks, Solid Edge, Geomagic Design X | Python, C++, Java, Matlab, Arduino | CFD, FEA, results analysis, visualization | Prototyping, 3d printing, 3d scanning.

Experience

Design Engineer at Motordyne Engineering *June 2021 - Present*

- Developed models of a low-profile combustion system for propulsion. Optimized design utilizing CFD simulations to minimize pressure drop and lower expected emissions by 15% at design point.
- Designed a fully variable fuel injection and ignition system for a non-traditional propulsion engine. Successfully implemented program and hardware in full system. Final design had cost savings of 70% over previous hardware.
- Increased efficiency of new product design by analyzing and optimizing vehicle systems by introducing a digital twin model.
- Developed tools for hybrid cycle thermodynamic analysis, verified with hand calculations. Integrated data retrieval and verification of simulations in cycle analysis.
- Reverse engineered critical components using 3D scanning and measurement techniques. Prototyped design changes and implemented provisions for integrating additional components.
- Managed a team of engineers to expand capabilities in reverse engineering. Successfully hired four members and achieved increased efficiency and productivity in this area.
- Lead development on test stand and data acquisition systems. Designed custom measurement tools and microcontroller-based data acquisition system for engine performance tracking. Cost was drastically lower than other data acquisition options.
- Crafted models and engineering drawings of existing products for RFQ submissions.
- Optimized CFD simulation workflow by lowering average time needed for accurate results, leading to a 75% increase in simulation efficiency.
- Improved computer network to maximize simulation capabilities.

Projects

Smart Manufacturing with Kawasaki robotic arms

- Updated computer vision for identification of payloads in a manufacturing setting, with 99% accurate recognition of multiple materials.
- Improved smart robot flexibility with depth sensing through infrared imaging, widely increasing the capability of payload manipulation in the workspace.
- Programmed Arduino, PLCs, and SCADA for robot and conveyor systems.

Education

Kennesaw State University - Marietta, GA

Bachelor of Science in Mechatronics Engineering *May 2022*