ANDRÉS WITZKE

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Education

Glasgow School of Art & University of Glasgow — **Glasgow, UK**
Master of Science – Product Design Engineering (Distinction) — *September 2020*

Boston University College of Engineering — **Boston, MA**
Bachelor of Science – Mechanical Engineering — *May 2017*
Honors: Cum Laude (GPA: 3.53)

Experience

Pratt & Whitney — **Middletown, CT**
Project Engineer — *July 2017 – July 2019*

- Led the redesign of critical, major rotating hardware. I drove the effort to address the underlying cause behind the A321neo incidents that grounded the fleet in January 2018. This included managing a small team, interfacing with subject matter experts, resource management, risk-assessment, iteratively reacting to data and clear constant communication with stakeholders and program managers.
- Executed the relocation of a borescope port in the compressor of a military engine, which required sensitivity studies using NX9, a probabilistic analysis of the effects of the change, and incorporation into production drawings.
- Modeled, structurally analyzed and evaluated integrally bladed rotors to durability and safety criteria such as stress, modal responses, FMEA, material quality and predicted life under extreme environments using FEA in ANSYS.

Fractyl Laboratories — **Lexington, MA**
Product Development Co-Op — *January – May 2017*

- Developed a process that welds two separate polymer shafts of different flexibility to create a composite that improves the catheter's ease-of-use and patient safety during the procedure.
- Integrated and validated the turnkey process into production. In four months, I selected and ordered machinery, created a quality assurance process, designed fixtures and assimilated the operation into the manufacturing line.

MassChallenge Startup Accelerator — **Boston, MA**
Product Design Intern — *June - November 2016*

- Designed, developed and tested prototypes and product components for multiple early stage startups in the MADE R&D Lab. Rapidly outputted concepts through a variety of methods – sketching, CAD Models, 3D printing, woodworking, laser-cutting, CNC machining and silicone casting.
- Defined customer requirements, budgeted accordingly and created plans for manufacturing and distribution.

Rensselaer Polytechnic Institute — **Troy, NY**
Undergraduate Researcher — *June - July 2015*

- Led a team of student researchers in a project for the Light-Enabled Systems & Applications (LESA) Engineering Research Center headquartered in RPI.
- Designed, assembled and tested multiple iterations of induction generators. In a span of just two months, I took the concept and created a testing apparatus, produced a prototype and coupled it with voltage amplifying circuits and LEDs. By harnessing the kinetic energy in a harvesting tank, the light emitting generators will be used to grow algae.

Relevant Projects

Wild Flag Studios: Loisirs Montréal Public Artwork — *July – September 2019*

- Designed the multi-part component of a three-meter tall kinetic sculpture using Fusion360 that ensured structural capability with FEA analysis and prioritized design for manufacturing and assembly for the 500+ units needed.
- Turned customer requirements into design decisions that factored in budgeting, man-power and delivery times.
- Evaluated and requested quotes from multiple suppliers in a dialogue that involved the variety of manufacturing methods and opportunities for cost reduction.

Skills

Design/Machining: NX, Workbench, Creo, SolidWorks, Fusion360, 3D Printing, Milling, Laser Cutting, Technical Drawing.
Software/Electronics: MS Project, C++, MATLAB, Python, Max8, Microcontrollers, Circuit Wiring, Soldering.