

# 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**

*Engine Development 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: InDesign, Rhino, C++, HTML, MATLAB, Python, Max8, Microcontrollers, Circuit Wiring, Soldering.