

Joseph B. Ferreira

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SUMMARY

Mechanical Engineer with over 5 years design and drafting experience. Solid understanding of manufacturing, GD&T, CAD (particularly SolidWorks) and FEA. Thrives in small group settings, with an aptitude to learn new skills quickly.

PROFESSIONAL EXPERIENCE

Design Engineer - Busek Co. Inc (Natick, MA)

2004 - 2010

- Designed and drafted parts, fixtures and assemblies needed to construct prototype spacecraft thrusters.
- Setup and ran experiments to measure droplet size, and assisted on other lab tests.
- Performed FEA on thruster designs.
- Documented accumulated changes to existing parts and redesigned parts to improve tolerance.
- Interfaced with manufacturers to ensure ease of manufacture.
- Created conceptual mockups for new proposals.
- Inspected parts for compliance, by hand and by CMM.

Intern, Engineer - Mechanology, LLC (Attleboro, MA)

1999 - 2001

- Created SolidWorks models for the complicated meshing surfaces of prototype Toroidal Intersecting Vane Machine (TIVM).
- Drafted formal drawings for existing TIVM parts.
- Designed and drafted the manifold to conduct air to and from the each of the 10 individual rotors' chambers.

Researcher - MIT, Pappalardo Lab (Cambridge, MA)

1998

- Set up and tested a new Laser Cutter donated to the Pappalardo Lab, determining what materials and thickness could be cut.
- Documented and worked to improve the user interface for the laser cutter.
- Work on this project ultimately led to my undergraduate Thesis.

EDUCATION

Massachusetts Institute of Technology (Cambridge, MA)

2002

BS in Mechanical Engineering.

Thesis: *Using Spreadsheets to Parameterize Spur Gear Design for Laser Cutters.* Created an Excel spreadsheet that would generate the outline of a gear, using the basic parameters of that gear (Number of Teeth, Pressure Angle, and Diametral Pitch) as inputs. The laser cutter could then fabricate a set of meshing gears from the outlines.

Courses of particular interest: Control Systems, Product Design, Lean Manufacturing Techniques.

TECHNICAL SKILLS

CAD and Modeling: SolidWorks, COMSOL, Pro/ENGINEER

General Computer Experience: Microsoft Word, Excel, Windows, MacOS, UNIX.