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JULIEN COHEN

Driven, creative mechanical engineer focused on additive manufacturing enabled precision design.

[Mailing address upon request]
Austin, TX
78705

EDUCATION

University of Texas at Austin

M.S.E. Mechanical Engineering
Manufacturing & Design
- 2014 - 2016
- GPA: 3.9
- Thesis + 30 credits

- Precision machine design
- Additive manufacturing
- Modeling of physical systems
- High-temperature materials
- Materials Selection

University of Michigan

B.S.E. Mechanical Engineering
- 2010 - 2014
- GPA: 3.1
- SAE Baja Racing
- Wolverine Jiu Jitsu

WORK EXPERIENCE

University of Texas at Austin

Aug. 2014 - current

Graduate Research Assistant, M.S.E Research

- Developed multi-physics CFD simulations to design and test novel heat exchanger geometries using tapered pin fin arrays, produced by additive manufacturing, and never before studied.[1]
- Prototype wind tunnel system design, fabrication, and validation to test simulated fluid phenomena.
- Acquired digital sensor data using purpose-built Labview tools, analyzed using Matlab scripts.
- Designed prototype aluminum alloy powder blends for SLM printing on EOSINT M290 machines.[2,3]
- Tested mechanical performance of DMLS aluminum parts using experimental print parameters.
- Used optical and electron microscopy to determine microstructure and internal crack formation.

[1] J. Cohen, "Development of Novel Tapered Pin Fin Geometries for Additive Manufacturing of Compact Heat Exchangers," M.S. Thesis, Dept. Mech. Eng., Univ. Texas at Austin, Austin, 2016
[2] Patent application filed for SLM printing of fully-dense Al alloys using elemental powder blends.
[3] C.E. Roberts, D.L. Bourell, T. Watt, and J. Cohen, "A novel processing approach for additive manufacturing of commercial aluminum alloys," *Phys. Procedia*, in press.

Holtec International

Summer 2012, 2013

Design Engineering Intern

- Worked on a 6 person team designing the HI-SMUR 160, a 160 MWe Inherently Safe Modular Underground Reactor.
- Organized reactor component placement in a next-generation vertically orientated containment vessel.
- Designed and modeled modular reactor components.
- Conducted static and dynamic FEA feasibility testing.
- Maintained full early-stage models of the containment vessel and reactor core in SolidWorks assemblies.
- Authored reference documents for reactor components based on Westinghouse AP-1000 and NRC documentation.

Teletronics Technology Corp.

Summer 2011

Test Engineering Intern

- Developed testing procedure for modular data acquisition controller boards.
- Implemented hardware testing procedure for high-speed networked camera communication systems.
- Designed and analyzed board layouts for prototype test boxes.

SKILLSET

Design
- Solidworks - CSWP certified
- Catia
- Mastercam X7
- ASME Y14.5 GD&T

Lab/Testing
- Mechanical, thermal, fluid systems analysis
- Precision metrology
- NI Labview

Manufacturing
- Commercial powder bed additive systems
- 2D/3D CNC machinining
- Composite fabrication
- Sheet metal bending
- Custom tooling

Simulation/Analysis
- ANSYS Workbench
- Matlab
- C++

PROJECTS

Topology optimized quadcopter frame
- Structurally optimized using SolidThinking Inspire, analyzed in ANSYS, printed in Nylon 12.

Precision desktop metal lathe
- Design, sourcing, and production of bearing, v-belt, powerscrew, and flexure subsystems.

Intraocular energy harvesting using triboelectric nanogeneration
- Proof of concept for converting eye motion into electrical power for use in implanted electronics.