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Xander Cesari

OBJECTIVE:

To expand and improve my ability to manage electromechanical systems through the engineering process of design, prototype, test, and analyze.

EDUCATION:

Rensselaer Polytechnic Institute ***Class of 2014***

- BS in Mechanical Engineering, May 2014

Northfield Mount Hermon School ***Class of 2009***

- Academic Honors
- Lief Bredenberg Student Leader Award for work in residential freshmen advisor program

EXPERIENCE:

Fiat Chrysler Automobiles – V8 Calibration and Development Engineer ***August 2016-Current***

- Build test plans, data analysis tools and strategies, and coordinate dyno testing to develop engine calibrations.
- Requires union of engine fundamental theory with practical application of testing and performance.

EcoMotors, Inc – Test Engineer ***July 2014-August 2016***

- Responsibilities include data acquisition systems, dyno operation, and test plan design and execution
- Data acquisition system requires wiring harness design and construction, IC simulation and prototyping
- Used LabVIEW to design acquisition systems for specific tests such as torsional vibrations measurements and live compressor mappings
- Managed CAN buses; building and reading messages, J1939 protocol, and debugging

RPI Formula SAE Team – Engine Group Leader ***2011-2014***

- Leadership position on student-run team that designs, builds, and races a prototype car annually
- Used theory, Ricardo WAVE, and physical testing to design rapid prototyped intake
- Extensive fabrication (manual machining, welding, wiring) and calibration
- Managed 10-20 students to coordinate system level design and fabrication
- Emphasis on personnel management in high-stress, fast-paced environments
- Launched public outreach programs, alumni network, and design process and documentation standards

Oelschlaeger Research Group – Research Lead ***May 2012 - 2014***

- Initiated and directed engine dynamics group within combustion lab
- Modified diesel one-cylinder engine for testing of fuels and built LabVIEW combustion analysis data acquisition system
- Coauthored paper (M. Huang, S. Gowdagiri, XM Cesari, “Diesel Engine CFD Simulations: Influence of Fuel Variability on Ignition Delay”, FUEL, 2016)

TVFerret – Manufacturing Engineer ***January 2012-April 2012***

- Contracted to perform design, CAD, and CNC programming for remote control pipe inspection crawlers

CNC Prototyping/Machining Business - Principal ***September 2011-April 2012***

- Independent design and CNC machine work for local companies and start ups

Costa Precision Manufacturing – Intern ***April 2011-August 2011***

- Programmed CNC milling machines in a high-precision production environment to implement Jergens quick fixture change system

OTHER EXPERIENCE:

American Precision Museum - Intern ***June 2009-August 2009***

- Adjunct at a museum of historical machining and manufacturing

SKILLS:

DESIGN

MECHANICAL:

- CAD: Extensive SolidWorks and familiarity with Unigraphics NX, Autodesk Inventor.
- Analysis: SolidWorks FEA, Ricardo Wave, as well as design optimization and mechanical synthesis in MATLAB.
- Working knowledge of GD&T, technical drawings, and design for manufacture.

ELECTRICAL:

- Knowledge of basic digital and analog circuits including microcontrollers and instrumentation analog electronics (pulse converters, op amps, H-bridges, wheatstone bridges, etc).
- Experience in reading datasheets and selecting components, SPICE simulation in PSPICE, and schematic layout.
- Programming experience in C/C++ for embedded systems.

PROTOTYPE

MECHANICAL:

- Extensive experience in fabrication: welding, manual machining, as well as automotive mechanics.
- CNC experience includes programming in MasterCAM and FeatureCAM, setup, and mill operation.

ELECTRICAL:

- Circuit build experience predominantly in breadboarding, soldering (SMD and through hole) protoboard.
- Ability to lay out, design, and build complex mil-spec/motorsports wiring harnesses.

TEST

MECHANICAL:

- Data acquisition experience ranges from combustion analysis systems to MoTeC race data acquisition.
- LabVIEW CLAD certified and extensive experience building DAQ programs for specific tests.
- Broad knowledge of sensors: low and high speed pressure transducers, thermocouples, RTDs, accelerometers, load cells, and more. Ability to source, install, troubleshoot, and calibrate.

ELECTRICAL:

- Competency with common electrical tools: oscilloscopes, function generators, spectrum analyzers, and CAN sniffers/analyzers.
- Understanding of testing or troubleshooting circuits both on the bench and in use.

ANALYZE

MECHANICAL:

- Familiarity with failure analysis through inspection techniques and observation of failure modes.
- Execution of data analysis in a variety of environments: Excel VBA, MATLAB, and LabVIEW.

ELECTRICAL:

- Basic understanding of power consumption, noise immunity, and thermal effects.
- Application of data acquisition to circuits and implementing analysis in MATLAB or Excel.