Brendan O'Grady

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SUMMARY:

- Six years experience working on mechanical design and analysis projects
- Trained and mentored new design engineers and interns
- Excels at concept generation and rapid prototyping concept ideas
- Developed new best practice procedures for design and analysis
- Background in mechanisms with an interest in robotics and computer science

EXPERIENCE:

Cummins Inc. Heavy Duty Engineering Columbus, IN
Senior Design Engineer *Sept. 2010-Present*

- Achieved over a 1% improvement in fuel economy by developing a new camshaft design optimization procedure
- Performed component finite element fatigue analysis and modal analysis to meet engine life targets
- Mentored design engineering new hires and interns in design processes and analysis procedures
- Created a program to analyze data from valvetrain test rig in order to improve a dynamic analysis model
- Worked on a team to convert a compression ignition engine to a spark ignition engine by modifying and prototyping base engine and ignition components
- Provided design and analysis support for various projects including engine brake redesign, bolted joint design, heat shield thermal analysis and geartrain analysis
- Utilized physics based approach to run a root cause analysis on engine components and generate proposed solutions
- Developed a design guide for geartrain accessory drives as part of a Six Sigma project
- Successfully redesigned a power take-off option to achieve higher torque output and improved reliability

Air Force Research Labs at Wright Patterson Air Force Base Dayton, OH
Graduate Research Assistant *May 2008-April 2010*

- Analyzed actuator placement within a morphing wing mechanism to minimize the weight of the structure and the actuation energy usage
- Performed computer simulation and analysis using MATLAB, MSC ADAMS and NASTRAN
- Designed an experimental test setup using Solidworks
- Integrated sensors for data acquisition and controlled experiment using LabView
- Prepared technical paper using LaTex and presented research at an ASME Conference

University of Dayton Research Institute Dayton, OH
Graduate Research Assistant *Oct 2007-May 2008*

- Researched spherical mechanisms and identified potential applications for the technology to replace robotic arms in manufacturing
- Designed demonstration devices to present the technology to industry experts
- Manufactured functional prototypes using a Z-Corp Rapid Prototyping Machine
- Worked with machinist to optimize manufacturability of the technology

ETHOS Internship Comitancillo, Guatemala
Appropriate Technology Volunteer *July 2007-September 2007*

- Organic farm maintenance, masonry and road building
- Designed drip irrigation system, serpentine water heaters, and rocket stoves
- Installed a bio-digester to produce cooking gas and educated family on operation and maintenance
- Designed and built animal enclosures for local families

EDUCATION:

M.S. Mechanical Engineering, University of Dayton May 2010, GPA 3.89
- Master's Thesis: Multi-Objective Optimization of a Three Cell Morphing Wing Substructure

B.S. Mechanical Engineering, University of Dayton May 2007, GPA 3.22
- FE Certified Engineer
- SAE International Super-mileage Competition
- University of Dayton President's Emissary

SOFTWARE PROFICIENCIES:

- Ansys Workbench
- GT Suite
- ProE/Creo
- MATLAB
- LabView
- Solidworks
- MSC ADAMS
- LaTex
- Python
- C Programming
- Microsoft Office
- Sony Vegas

SKILLS:

- Finite Element Analysis
- Bolted Joint Analysis
- Design of Experiments
- Design For Six Sigma
- Life Cycle Analysis
- Mechatronics design
- Rapid Prototyping
- Appropriate Technology

OTHER ACTIVITIES:

- Arduino/Raspberry Pi Programming
- Computer Science
- Hobby Robotics
- Hobby CNC
- Web Development
- Audio/Video Production