CHAD WILCOX

5620 Fossil Creek Pkwy, #7105 · Ft. Collins, CO 80525 · (970) 420-8782 · cwilcox@pioneer-engineering.com

Education

- **Master of Science Degree in Mechanical Engineering**
  Colorado State University – Fort Collins, CO **2004 – present**
  GPA: 3.1 / 4.0 *Expected Graduation:* May 2006
  Concentration: Applied Mechanics *Thesis Topic:* Force Prediction in Engine Structures
- **Bachelor of Science Degree in Mechanical Engineering**
  Colorado State University – Fort Collins, CO **2004**
  GPA: 3.3 / 4.0
  Design Project: Noise reduction of a two-stroke direct injected snowmobile
  Honors: Pi Tau Sigma honor society, 2nd Place SAE Collegiate Design Presentation

Professional Experience

- **Mechanical Engineer**
  Pioneer Engineering – Fort Collins, CO **May 2004 - present**
  Mechanical engineer for reliability engineering company. Specialize in vibration condition monitoring, modal analysis, mentoring and training for vibration analysis, and various reliability engineering services. Have analyzed a variety of equipment in different applications such as wastewater, glass production, pharmaceutical, mining, food production, refining, pipelines, and others.
- **Advanced University Reciprocating Engine Program**
  Caterpillar / National Energy Technology Laboratory – Mossville, IL **2005**
  Provided support for the analysis group of a cross functional team developing a new large high speed diesel engine to be used in various applications. Support included performing critical modal tests at many different levels of structure complexity. Responsibilities included post processing and analysis of test results. The work scope also involved providing direct correlations between modal test results and computer models via commercial available software. Recommendations based on these findings helped to drive redesign and retest.
- **Failure Analysis Engineer**
  Seagate Technologies – Longmont, CO **2004**
  One of two failure analysis engineers supporting customer accounts. Trained colleague on proper use of optical surface analyzer and various equipment. Performed hard drive teardowns, analysis and wrote technical reports daily.
- **Heads/Media Mechanical Teardown Intern**
  Seagate Technologies – Longmont, CO **2003**
  Provided direct support to a failure analysis group consisting of engineers and technicians by performing hard disk drive teardowns and failure analysis. Analysis required much team interaction and precision work using table top microscopes, various interferometer microscopes, and atomic force microscopes. Created procedures for use of optical surface analyzer and surface profiler which engineers and technicians reference.

Project Experience

- **Vibration Analysis Mentoring / Training**
  Provide mentoring and seminar training for clients with in-house condition monitoring programs. Mentor and train clients on vibration fundamentals, proper hardware and software use (Entek and CSI products), and vibration analysis. Train new and experienced analysts in both private and public seminar settings.
- **Contracted Vibration Condition Monitoring / Vibration Troubleshooting**

Perform routine and one off data collection on various rotating machinery, such as electric motors, pumps, gearboxes, hammer mills, blowers, and centrifuges. Utilize advanced techniques such as phase analysis and modal analysis when required for troubleshooting.

- **Refinery Reliability Contract Engineer**
  Actively part a small group of engineers responsible for auditing all of refinery's assets for the purpose of increasing plant reliability. Audit included identifying criticality of assets and associated spare parts for fixed and rotating equipment, reviewing current preventative and condition based maintenance tasks as well as creating new necessary tasks on an individual and global basis.
- **Vibration Database Revamp**
  Acted as mentor to restructure vibration database for oil refinery. Restructuring included software and hardware updates, review of current program, training of personnel, all new collection specifications and alarming.
- **Modal Analysis / ODS Analysis of Rotating Equipment / Structures**
  Perform modal and ODS data collection using mutli-channel data acquisition systems. Analyze data and use FEA to identify problem and determine necessary design modifications to machinery and/or structures.
- **Clean Snowmobile Challenge**
  Acted as CSU project team leader for 2004 collegiate competition. Quantified noise produced by a snowmobile track assembly and made design modifications, reducing overall noise by 6 dBA. Optimized engine map at sea level for low emissions and high fuel economy. Placed 2nd in annual Colorado SAE chapter public presentations.

Engineering Skills

- **Vibration Collection/Analysis**
  ISO Level III analyst. Portable data collection, phase analysis, modal analysis using impact testing, multi-channel data collection, and signal processing in Matlab.
- **Computer Software**
  Matlab, Entek Odyssey, MEscopeVES, FEMtools, EMPAC CMMS, AMS Suite Machinery Health Manager, data acquisition software, Mathcad, Microsoft Office suite
- **Engineering Intern**
  Passed fundamentals of engineering exam in 2003.

Personal

Enjoy working on mechanical things, mountain biking, backpacking, rock climbing, snowshoeing, and snowmobiling.