Peter Vuyk

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Post-Graduation

Trilogy Education, *Teaching Assistant* | Sep 2020 - Present, **4 mo.**

- Work alongside instructor to teach and assist students in learning how to mine, mung, analyze, and visualize data.
- Teach subjects starting with Excel and VBA and progressing through Python, Git/GitHub, APIs and JSON, JavaScript, HTML/CSS, SQL & NoSQL, R, Tableau, descriptive and inferential statistics, Hadoop, Spark, and machine learning.

Cummins Inc., *Field Test Engineer* | Jul 2020 – Present, **24 mo.**

- Facilitate customer relations and service with 5 outside customers agreeing to operate with a development engine
- Utilize MATLAB and Excel tooling for assessing duty cycle and performance data being transmitted from field units
- Support team via Power BI report generation/maintenance, SharePoint organization, and Nintex workflow automation

Cummins Inc., *Test Engineer* | Jan 2019 – Jul 2020, **16 mo.**

- Executed seven local and offsite engine tests (typically running 24/7) in conjunction with mechanical support, IT, facilities, operations, and product validation teams via regular presentations and targeted communications
- Automated engine testing with Cyflex and processed/analyzed collected data with Excel VB, GNU Bash, and Python
- Developed Excel/VBA and MATLAB tools for processing, analyzing, and visualizing large, disparate datasets containing raw engine and test cell sensor data. Tools currently used by over 50+ validation engineers and growing.
- Mentored new test engineers on best-practices in data analysis, communication, organization, and test planning

Pre-Graduation

Cummins Inc., *Performance Modeling Intern* | May 2018 – Aug 2018, **3 mo.**

- Delivered MATLAB GUI for k means clustering customer engine operation data to improve product validation by helping to quantify the characteristics of representative or anomalous product usage across engine variations and applications.
- Executed physics-derived damage factor regression models to predict piston and cylinder head thermal fatigue life based on virtual sensors to compare and validate the abusiveness of engine testing and customer usage

Owens Corning/Ohio State University, *Undergraduate Researcher* | May 2017 – Dec 2018, **19 mo.**

- Designed experiments to study response of elastomeric objects during vibrational, impact, or static loading applications
- Simulated structural response of materials using FEA software. Utilized 3D printing for creating test specimens

Ohio State University, *ME 2900 Intro to Mech Design Undergraduate TA*| Jan 2017 – Dec 2017, **12 mo.**

- Engaged students in open lab to assist with electronics, controls, and Arduino programming labs and projects.

DHL Express CVG Gateway, *Engineering Intern* | May 2016 – Dec 2016, **3 mo.**

- Developed Excel VBA and SSMS solution that centralizes and pre-processes employee productivity data (hours, production, quality, etc.) from disparate sources and regularly reports KPI trend visualizations to management.

Education

- Ohio State University, Columbus, OH
- B.S. Mechanical Engineering
- GPA: 3.74 / 4.00

Honors/Awards

- OSU Denman Research Forum `18 – 3rd Place Mechanical & Aero Eng.
- 2018 Outstanding Leadership and Research Award granted by OSU Department of Mechanical and Aerospace Engineering.

Technical Qualifications & Proficiencies

Languages	Python, MATLAB, Git, Excel/VBA, Bash, JavaScript (Node, React, D3, Leaflet), Docker
DBs/Software	PostgreSQL, MongoDB, VS Code, Anaconda, Jupyter, Power BI, SharePoint 2010/13, Zoom
Concepts	Probability & Statistics, Data Analysis & Machine Learning, REST APIs, Arduino/Raspberry Pi
Process Knowledge	Technical Documentation, Budgeting and Scheduling, Presentations, Public Speaking

Publications

Vuyk, P., & Harne, R.L. (2020). Collapse characterization and shock mitigation by elastomeric metastructures. Extreme Mechanics Letters, 37, 100682.

Vuyk, P., Cui, S., & Harne, R.L. (2018). Illuminating Origins of Impact Energy Dissipation in Mechanical Metamaterials. Advanced Engineering Materials, 20, 1700828.