Audun Myers

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Education

Sept. 2018 - May 2022	**Michigan State University**, East Lansing, MI *Ph.D. in Engineering* | Major: Mechanical Engineering GPA: 3.89/4.00
Sept. 2014 - Aug. 2018	**Grand Valley State University**, Allendale, MI *Bachelor of Science in Engineering* | Major: Mechanical Engineering GPA: 3.86/4.00

Publications

Journal Papers

1. **Audun D. Myers**, Joshua Tempelman, David Petrushenko, and Firas Khasawneh, Low-cost Double Pendulum for High-quality Data Collection with Open-source Video Tracking and Analysis. *HardwareX [Accepted].* 2020.
2. **Audun D. Myers** and Firas A. Khasawneh, On the Automatic Parameter Selection for Permutation Entropy. *Chaos: An Interdisciplinary Journal of Nonlinear Science [Editor's Pick].* 30, 033130, 2020.
3. **Audun D. Myers**, Elizabeth Munch, and Firas A. Khasawneh, Persistent Homology of Complex Networks for Dynamic State Detection. *Physical Review E* 100, 022314, 2019.
4. **Audun D. Myers** and Firas A. Khasawneh, Delay Parameter Selection in Permutation Entropy Using Topological Data Analysis. *arXiv preprint* arXiv:1905.04329, 2019.

Conference Papers

1. **Audun D. Myers** and Firas A. Khasawneh, Dynamic State Analysis of a Driven Magnetic Pendulum Using Ordinal Partition Networks and Topological Data Analysis. *ASME International Design Engineering Technical Conference [Best Paper Award]*, 2020.
2. Joshua R. Tempelman, **Audun D. Myers**, and Firas A. Khasawneh, Effects of Correlated Noise on the Performance of Persistence Based Dynamic State Detection Methods. *ASME International Design Engineering Technical Conference*, 2020.
3. Joshua R. Tempelman, **Audun D. Myers**, Melih C. Yesilli, and Firas A. Khasawneh, Vibration Testing of Lattice Metamaterials and Lumped Modeling Techniques. *ASME International Design Engineering Technical Conference*, 2019.

Scientific Presentations

1. **Audun D. Myers** and Firas A. Khasawneh (August, 2020). Dynamic State Analysis of a Driven Magnetic Pendulum using Ordinal Partition Networks and Topological Data Analysis. Paper remotely presented at the ASME IDETC-CIE conference.
2. Joshua R. Tempelman, **Audun D. Myers**, Jeffery Scruggs, and Firas A. Khasawneh (August, 2020). Effects of Correlated Noise on the Performance of Persistence Based Dynamic State Detection Methods. Paper remotely presented at the ASME IDETC-CIE conference.
3. **Audun D. Myers**, Elizabeth Munch, and Firas A. Khasawneh (June, 2019). Persistent Homology of Complex Networks for Dynamic State Detection. Paper presented at the 1st midwest graduate student conference: geometry and topology meet data analysis and machine learning, The Ohio State University, Columbus, OH.
4. **Audun D. Myers** and Firas A. Khasawneh (May, 2019). Delay Parameter Selection in Permutation Entropy Using Topological Data Analysis. Paper presented at the society for industrial and applied

mathematics conference on applications of dynamical systems, Snowbird, UT.

5. **Audun D. Myers** and Firas A. Khasawneh (April, 2019). Delay Parameter Selection in Permutation Entropy Using Topological Data Analysis. Paper presented at the great lakes society for industrial and applied mathematics section meeting, University of Michigan, Ann Arbor, MI.

Teaching Experience

Jan. 2020 - Apr. 2020
Michigan State University, Teaching Assistantship for Manufacturing Processes
- Assisted with teaching materials and student evaluation.

Aug. 2019 - Dec. 2019
Michigan State University, Teaching Assistantship for Heat Transfer
- Assisted with teaching materials and student evaluation.

Aug. 2018 - May 2019
Michigan State University, Teaching Assistantship for Vibrations Lab
- Instructor for vibrations and controls lab.

Aug. 2013 - May 2018
Grand Rapids Community College, Professional Physical Sciences Tutor
- Provided tutoring in calculus, differential equations, physics, and chemistry.
- Tutoring in lab, individual, and group settings.

Industry Experience

May 2016 - Dec. 2017
Hutchinson Antivibration Systems Inc., Mechanical Engineering Intern
- Part of development team for a mechatronic active mass damper designed for an automobile to automatically counter vibrations caused by an engine imbalance.
- Developed Python and VBA program to automate testing process, data analysis, and report generation for engine mount characterization.
- Worked in the research and development department for concept validation and testing.

Awards and Fellowships

- Third place award for best paper of the American Society of Mechanical Engineers International Design Engineering Technical Conference - 2020.
- Graduate Office Fellowship provided by Michigan State University - 2020.

Service

- Graduate Advisor for the engineering honors society Tau Beta Pi at Michiagn State University.
- President of the Michigan Lambda chapter of the engineering honors society, Tau Beta Pi, during undergraduate education at Grand Valley State University.
- Organized fundraiser group to cycle from Mexico to Canada for pancreatic cancer research (PanCan).
- Designed positioner system with no electromagnetic interference to be used by the electromagnetic compatibility research center at Grand Valley State University.

Skills

- **Programming/Languages**: Python, MATLAB, Julia, Mathematica, C++, Arduino C, and VBA.
- **Engineering Software**: SolidWorks, PFV (High Speed Camera Software), Simulink, and LabView.