

Turki Haj Mohamad

Villanova Center for Analytics of Dynamic Systems (VCADS), Villanova University
CEER 114, 800 E Lancaster Ave, Villanova, PA 19085, USA

Phone: 1-484 365 3425

Email: thajmoha@villanova.edu

www.linkedin.com/in/turkiturkey
vcads.org

EDUCATION

Villanova University, Villanova, PA

Jan. 2015-Jan. 2019

PhD in Mechanical Engineering

- Advisor: Professor C. Nataraj, c.nataraj@villanova.edu
- Focus area: Model-based and Data-Based Diagnostics of Machinery, Predictive Analytics, System Dynamics
- Cumulative GPA: 4.0
- Selected Courses: Computational Intelligence, Statistical Signal Processing, Optimization, Nonlinear Dynamics, Vibration Analysis, Dynamics of Rotating Machinery, Control System

University of Jordan

2009-2014

B.Sc. in Mechanical Engineering

- Cumulative GPA: 3.85 (ranked second in class)

WORK EXPERIENCE

Villanova Center for Analytics of Dynamic System (VCADS)

Jan. 2015-Present

Graduate Research Assistant

- Developed a novel feature extraction method based on the characterization of the density distribution
- Explored data-driven approaches for rolling bearing diagnostics
- Analyzed gear fault simulator data in collaboration with UTRC
- Performed data acquisition, signal processing on a rotating fault simulator machine

University of Jordan

Research Assistant

Summer 2014

- Investigated the nonlinear vibration of multi-walled carbon nanotubes
- Modeled carbon nanotubes using Timoshenko beam model

Senior Project

Oct. 2013 - May 2014

- Applied source and path noise control strategies to domestic pumps
- Researched the effectiveness of fiberglass resin material as an enclosure
- Designed and built a noise reduction enclosure

Lodz University of Technology in Poland

Research Assistant

Summer 2013

- Analyzed the thermal decomposition of exhausted gas of a helicopter engine GTD350
- Performed simulation of different models using MATLAB

PUBLICATIONS

Conference Proceedings

- M. Samadani, **T. Haj Mohammad** & C. Nataraj, "Feature Extraction for Bearing Diagnostics Based on the Characterization of Orbit Plots with Orthogonal Functions" Proceedings of the ASME 2016 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2016 August 21-24, 2015, 2016, Charlotte, NC, USA.

Technical Reports

- M. Samadani, **T. Haj-Mohamad**, C. Kwuimy and C. Nataraj, "Report on ONR Grant No. N00014-13-1-0485", Submitted to: Office of Naval Research Code 331, July 2015.
-

SKILLS AND PROFICIENCIES

Background and Experience

- **ANALYSIS**

- Data analysis, machine learning, predictive analytics
- Computational intelligence, optimization
- Data-based system diagnostics
- Nonlinear system modeling and analysis
- Rotor dynamics, diagnostics of rotating machinery, vibration analysis and applications

- **WORKSHOPS**

- Essential Algorithms for Integrated Vehicle Health Managements for Aerospace Applications, Indian Institute of Science (May 2016)

Engineering Applications

- **Programming:** MATLAB, C++
- **Analysis:** MATLAB, Simulink, LabView, HAP
- **CAD:** SolidWorks, Creo, 3D Max
- **Misc.:** Microsoft Office, LaTeX, Adobe Illustrator

Hands-On Skills

- **Data Acquisition:** NI-DAQ, LabView, MATLAB Data Acquisition toolbox
 - **Sensors:** piezoelectric accelerometers, proximity sensors, displacement laser sensors
 - **Machine shop:** lathe, milling and grinding machines
-

HONORS AND AWARDS

- 2016, Travel award for PHM Society Doctoral Symposium on Diagnostics and Prognostics
 - 2016, Member of the Villanova University Honor Society based on outstanding academic achievement
 - 2014, Final project awarded highest marks of engineering department class cohort
-

MEMBERSHIPS

- The American Society of Mechanical Engineers