Danny J. Lohan

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Education

University of Illinois at Urbana-Champaign

Ph.D. in Systems and Entrepreneurial Engineering — Exp. May 2019
M.S. in Systems and Entrepreneurial Engineering — 2016
B.S. in General Engineering — 2014

Research Interests

generative algorithms · evolutionary algorithms · finite element analysis · heat transfer · topology optimization · design automation · truss optimization · design for additive manufacturing · power electronics

Skills

Languages: MATLAB, Python **Software:** COMSOL, JMAG, SolidWorks, Inventor

Research Experiences

Engineering System Design Lab *Research Assistant* — Aug 2014-Present
Researching generative design of engineering systems. Investigating multi-physics power electronics modeling for design.

Toyota Research Institute of North America *Electrical Engineering Intern* — May 2017-August 2017
Electronics packaging optimization in 3D. Two-phase cooling experimentation.

Toyota Research Institute of North America *Electrical Engineering Intern* — May 2016-August 2016
Integrated software for electro-thermal-magnetic system design applications.

Toyota Research Institute of North America *Electrical Engineering Intern* — May 2015-August 2015
Optimized packaging for buck-converter prototype circuit.

Engineering System Design Lab *Undergraduate Researcher* — Aug 2012-May 2014
Utilized CNC machinary to construct custom components. Implemented control schemes via Matlab Simulink.

Select Publications

Danny J Lohan, Ercan M Dede, James T Allison. 'Topology Optimization for Heat Conduction Using Generative Design Algorithms.' Structural and Multidisciplinary Optimization 2016.

Ashish Khetan, Danny J Lohan, James T Allison. 'Managing Variable-Dimension Structural Optimization Problems Using Generative Algorithms.' Structural and Multidisciplinary Optimization 2015.

Danny J Lohan, Masanori Ishigaki, Ercan M Dede, James T Allison. 'Combined Lumped and Continuum Parameter Design Optimization of Electro-Thermal Systems.' IDETC 2016.

Danny J Lohan, Ercan M Dede, James T Allison. 'Topology Optimization Formulations for Circuit Board Heat Spreader Design.' AIAA Aviation 2016

Select Coursework

ME 570 Non-linear Solid Mechanics • AE 555 Multivariable Control Design • GE 598 Dynamic System Modeling and Design • GE 413 Engineering Design Optimization • CS 446 Machine Learning