

WaiYan (Anson) Chan

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EDUCATION

University of Wisconsin-Madison

B.S - Mechanical Engineering, GPA: 3.72/4.00

December 2021

M.S - Electrical and Computer Engineering, GPA: 3.88/4.00

Expected August 2024

- Advisor: Eric L. Severson

Coursework: Electromagnetic Design of AC Machines • Dynamics and Control of AC Drives • Redesign and Prototype Fabrication • Power Electronic Circuits and Laboratory • Finite Elements

RESEARCH EXPERIENCE

Wisconsin Electric Machinery and Power Electronics Consortium (WEMPEC)

Madison, WI

Graduate Research Assistant – Severson Group

August 2022 –Present

- **Additively Manufactured Stator Housing for High-Speed Bearingless Generator**
 - Develop and fabricate additively manufactured housing with integrated cooling channels for a 100kW, 80kRPM high-speed twin bearingless generator in a microturbine-based CHP generation system.
- **Bearingless Machines (BSPM) for Aerial E-Turbocharger Application**
 - Facilitate the development of a multi-physics modeling framework for evaluating and optimizing BSPM electric machines. Created Python scripts necessary to evaluate machine constants and coil inductances in JMAG.
 - Performing setup and characterization of a 4-DOF 8kW twin stators BSPM machine. Prepared engineering drawings and fabricated components for dynamometer fixturing.
 - Experimentally validate BSPM FEA thermal models created in ANSYS Motor-CAD.

Publication:

T. S. Slininger, **W. Chan**, E. L. Severson, and B. Jawdat, "An Overview on Passive Magnetic Bearings," 2021 IEEE International Electric Machines & Drives Conference (IEMDC), Hartford, CT, USA, 2021

WORK EXPERIENCE

Milwaukee Tool

Brookfield, WI

NPD Mechanical Design Engineer

January 2022 – August 2022

- Conducted FEA analysis on BLDC motors of different sizes and winding configurations, recommended optimal designs for product development using Pugh Matrix for informed and cost-effective solutions.
- Assessed power tool performance requirements through the collection and analysis of motor thermal characteristics and power output data from competitor products.

Wisconsin Electric Machinery and Power Electronics Consortium (WEMPEC)

Madison, WI

Undergraduate Researcher

September 2019 – December 2021

- Prototyped a desktop size dynamometer setup capable of characterizing electric machines rated up to 10 N-m of torque and 3000 RPM. Reduced the original setup volume by 35%.
- Collaborated with a team of graduate researchers to prototype a modular terminal box for powering a 200 kW NASA prototype machine. Responsible for sourcing parts and creating CAD models.
- Fabricated BSPM machines by producing stator slot windings and machining components used in the assembly.

PROJECTS & EXTRACURRICULAR

eMach – Open-Source Machine Modeling and Optimization Framework - github.com/Severson-Group/eMach

Compact Low Voltage Induction Motor with 3D Printed Housing – 2021 ME Senior Design

UW CoE Undergraduate Learning Center – Tutor, for Physics and Engineering Statics, 2018-2019

Wisconsin Racing Electric - Chassis Team Member, 2018 - 2021

- Competed in FSAE Electric 2019 in Lincoln, NE, 2nd place in design category.

SKILLS

Hands-on

Electric Machine Fabrication • Component Machining and Assembly • CAD Design and Drafting

Softwares

Python • SolidWorks • MATLAB / Simulink • NX • LabView • MAGNET • FEMM • JMAG • LaTeX • GD&T

Languages

English • Mandarin Chinese • Cantonese