

Khai Yi Chin

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306 E 30th St Apt 112
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EDUCATION

University of Texas at Austin

Masters, PhD in Mechanical Engineering (Dynamic Systems and Controls)

Austin, TX, USA
2021

University of Michigan

Bachelor of Science in Engineering in Mechanical Engineering

GPA: 3.59/4.00

Ann Arbor, MI, USA
Apr 2016

Sunway University

American Degree Transfer Program for Mechanical Engineering

GPA: 3.80/4.00

Selangor, Malaysia
Jul 2013

EXPERIENCE

University of Michigan, Robotics and Motion Laboratory

Nov 2014 – Jun 2016

Undergraduate Research Assistant, "Feedback Control with Novel Sensor on Smart Actuators"

- Wrote MATLAB scripts to facilitate sensor design by computing sensor Q-factor based on parameters of tank circuit.
- Constructed LabVIEW scripts for automated experimentation of novel sensors on actuators.
- Integrated the TI LDC 1614 Inductance to Digital Converter to smart braids using a NI I2C bus for high frequency communication.
- Applied moving average filters of different window sizes to process noisy data from potentiometer in MATLAB and LabVIEW.
- Won the 2015 Prize for Contributions in Soft Robotics Research competition with novel sensor development.
- Designed and built a test fixture for pneumatic actuators using pressure sensors and solenoid valves.

University of Michigan, Pierpont Commons

May 2014 – Apr 2016

Student Building Manager

- Cooperated with departments and tenants within building to solve conflicts and problems past regular business hours.
- Identified safety and security problems of building until 1AM to ensure smooth operation of building.

PROJECTS

University of Michigan, Design of Digital Control (ME 561)

Jan 2016 – Apr 2016

"Implementation of Digital Controller on Robotic Manipulator to Achieve Input Tracking"

- Modeled 3 DOF Linear Time Varying robotic manipulator in MATLAB and Simulink for simulation.
- Utilized the Newton Euler method to obtain equations of motion in state space form.
- Designed PID and LQR controllers over a linearized trajectory and for impulse disturbance rejection for manipulator.

University of Michigan, Design and Manufacturing III (ME 450)

Sep 2015 – Dec 2015

Senior Design Project - "Adaptive Materials Inc. Blue Board Controller for Test Protocol"

- Created LabVIEW scripts to control Blue Board Controller using a real time PID controller.
- Incorporated 3rd party data acquisition device with LabVIEW to communicate with Blue Board Controller.
- Prepared technical documentation and schematic drawings for the Blue Board Controller to AMI.

University of Michigan, Design and Manufacturing II (ME 350)

Sep 2014 – Dec 2014

Junior Design Project - "Laser Reflecting Linkage"

- Optimized linkage movement using C with Arduino Uno microcontroller to achieve desired linkage behavior.
- Achieved highest accuracy of laser reflection within section of 8 teams.

University of Michigan Solar Car Team

Jan 2014 – Oct 2014

Mechanical Engineering Department

- Designed parking brake and remodeled brake mount for Quantum during the American Solar Challenge 2014.
- Analyzed and optimized of parking brake model on Hypermesh and OptiStruct, taking into consideration forces acting on mount during braking.

LEADERSHIP

University of Michigan Malaysian Students' Association

Oct 2014 – July 2014

Midwest Games '15 Committee Logistics Director; Check-in Co-director

- Coordinated a team for the annual sporting regional event for Malaysians in the Midwest.
- Systemized and oversaw check-in procedure during event of 1200 participants.
- Facilitated venue reservations to ensure smooth operation and security of event.

SKILLS

Computer : LabVIEW, MATLAB, Microsoft Office, C++, Latex, SolidWorks, Siemens NX, HTML, CSS
Languages : Fluent – English, Chinese, Malay, Cantonese; Basic – Japanese

PUBLICATIONS

- Felt, W., Chin, K. Y. and Remy, C. D., 2016. “Contraction Sensing with Smart Braid McKibben Artificial Muscles,” *IEEE/ASME Transactions on Mechatronics*, **21** (3), pp. 1201-1209.
- Felt, W., Chin, K. Y. and Remy, C. D., 2016. “Self-Sensing Pneumatic Artificial Muscles for Feedback Control using the Inductance of “Smart Braids”,” *Dynamic Walking 2016*, University of Michigan, Ann Arbor, MI.
- Felt, W., Chin, K. Y. and Remy, C. D., 2015. “Dynamic Tracking of Joint Motion with Antagonized Smart Braids,” *Fluid Power Innovation & Research Conference 2015 (FPIRC15)*, Chicago, IL.

PRESENTATIONS

- Chin, K. Y., 2015. “Understanding and Testing Self Sensing McKibben Artificial Muscles,” *ME Undergraduate Symposium 2015*, University of Michigan, Ann Arbor, MI.

AWARDS

- Recipient, Soft Robotics Toolkit 2015 Prize for Contributions in Soft Robotics Research – Grand Prize 2015
- Recipient, University of Michigan Dean’s List Award FA 2013 – WN 2015