

Khai Yi Chin

+1 (734) 730-8497
khaiyichin@utexas.edu

www.khaiyi.me

306 E 30th St Apt 112
Austin, TX 78705

EDUCATION

University of Texas at Austin Austin, TX, USA
Masters, PhD in Mechanical Engineering (Dynamic Systems and Controls) 2021
GPA: 3.50/4.00

University of Michigan Ann Arbor, MI, USA
Bachelor of Science in Engineering in Mechanical Engineering Apr 2016
GPA: 3.59/4.00

Sunway University Selangor, Malaysia
American Degree Transfer Program for Mechanical Engineering Jul 2013
GPA: 3.80/4.00

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
Final Project - "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 parking brake model using Hypermesh and OptiStruct, taking into consideration forces acting on mount during braking.

LEADERSHIP

University of Michigan Malaysian Students' Association Oct 2014 – July 2015
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, Simulink, 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