Yutian Han

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🪪 https://kevinhangoat.github.io/me/

Born 4 February 1997, China

EDUCATION

08/2019 – present

University of Michigan, Ann Arbor, U.S.A,

Master of Science in Mechanical Engineering

- Final grade: 4.0 out of 4.0
- Focus: Robotics, Mechatronics and Control
- Courses: Mathematics for Robotics, Robotics Kinematics and Dynamics, Self-Driving Cars, Mobile Robotics

09/2015 – 05/2019

Lafayette College, Easton, U.S.A,

Bachelor of Science in Mechanical Engineering

- Final grade: 3.94 out of 4.0
- Focus: Systems and Control
- Bachelor thesis: Design an Inverted Pendulum Cart and Study its Application in Autonomous Balancing Skateboard
    - Designed and built a Segway-alike self balancing skateboard to help novice riders (utilized LQR, feedback controller, coded in MATLAB, C++)
    - Directed a human subject test to study the rider-skateboard interaction
- Senior Design: Development of the Control System for a Phase-Changing-Material-based Heat Exchanger in Cooling
- Relevant Courses: Dynamics of Physical Systems, Control Systems and Mechatronics, Differential Equations with Linear Algebra

02/2017 – 05/2017

Jacobs University, Bremen, Germany, A Semester-Long Exchange Program

- Final grade: 3.97 out of 4.0

09/2012 – 06/2015

Pinghe School, Shanghai, China, IB Diploma

RESEARCH AND PROJECTS

02/2020 – 05/2020

University of Michigan, Ann Arbor, U.S.A,

Localization of Robots Using Invariant Extended Kalman Filter

- Derived a Left Invariant Extended Kalman Filter to estimate pose of a robot in the world frame using IMU and GPS measurements. (https://github.com/Gregory-Meyer/mobile-robotics-final-project)

09/2019 – 01/2020

University of Michigan, Ann Arbor, U.S.A,

Controls and Perception of a Self-driving Car

- Utilized trajectory synthesis and model predictive control to simulate and control a car driving on a real track
- Applied deep learning approach to recognize different car types in images

09/2017 – 05/2019

Lafayette College, Easton, U.S.A,

Wind Tunnel Experimentation and Image Processing

- Captured instant pictures of wingtip vortices using high-speed cameras
- Utilized MATLAB to process images and quantify a relation between variables
- Designed components for wind tunnel using Inventor

06/2016 – 09/2017	**North American Nanohertz Observatory for Gravitational Waves, Easton, U.S.A, Pulsar Timing and Data Analysis**

- Utilized Python to process the data of pulsar timing and improve the process of signal calibration
- Improved the data accuracy by 10-15 percent, leading to a bigger chance of detecting gravitational waves

WORK EXPERIENCE

06/2019 – 08/2019	**Le Wagon, Shanghai, China, Full stack Developer**

- Led a team to build a web application, BizWiz (www.bizwiz.me), which can extract tables from a given file and generate well-designed charts automatically
- Tutored students to code in Ruby on rails, JavaScript, HTML5 and CSS

02/2018 – 06/2018	**ABEC INC, Bethlehem, U.S.A, Mechanical Engineering Intern**

- Supervised the production line control systems
- Analyzed the performance of bioreactor agitators in different circumstances utilizing ANSYS
- Coordinated the communication between the design team and various customers and reviewed and completed the validation guide for bioreactors

EXTRACURRICULAR ACTIVITIES

05/2014 – present	CoFounded a nonprofit organization, DreamWeaver

- Helped Chinese high school students TO pursue their dreams and education
- Invited graduates from top universities to give speeches and host panels

10/2017, 10/2018	Participated in basketball intramural games and led the team to win 2017 champion
6/2014, 6/2015, 8/2018	Volunteer teaching in Qinghai, China

SCHOLARSHIPS AND HONOURS

08/2018	Tau Beta Pi Scholarship

- Granted to outstanding members of Tau Beta Pi, an engineering honor society that accepts the engineering students in the top 10 percent of their class

04/2018	Phi Beta Kappa

- An honour society that recognizes exceptional academic achievement in sciences

08/2016	Excel Scholarship at Lafayette College

- Honoured high-performing students to assist faculty members in research

SKILLS AND INTERESTS

IT skills	Good knowledge: MATLAB, C++, Python
	Intermediate: JavaScript, Ruby on Rails, HTML5, CSS
	Basic: SQL, JAVA, Julia, LaTeX, Linux
Engineering tools	Basic: Robot Operating System, Autodesk Inventor, ANSYS
Languages	Chinese (Native speaker)
	English (Full professional proficiency)
	German (Level A2)
Interests	Web design, Automotive Design, Astrophysics, Basketball, Drawing (Works can be found at: https://kevinhangoat.github.io/me/)