# Henry Kou

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**Carnegie Mellon University**
**School of Computer Science**
M.S. Robotics '26
GPA: 4.0/4.0

**UCLA**
**B.S. Electrical Engineering with breadth in Computer Science '21**
GPA: 3.5/4.0

## COURSE HIGHLIGHTS

Optimal Control and Reinforcement Learning
Multi-agent Path Planning
Computer Architecture & OS
Data Structures
Advanced Circuit Analysis
Linear Feedback Systems
Systems and Signals
Digital Signal Processing
Intro to Semiconductor Design
Differential Equations
Linear Algebra

## SKILLS

**Analog Design:**
Altium, Switching Power Regulators
**Embedded & Digital Systems:**
Teensy, STM32, MSP430, PSoC, Altera FPGAs, RPi, I2C, SPI

## SOFTWARE

C, C++, Python, Linux, ROS
Simplis/PSPICE, Mbed, Git, MATLAB,
Julia, VHDL, SystemVerilog,

## EXPERIENCE

**Research Assistant,** CMU Robotics Institute (Fall 2022 - Current)
Developing embedded systems, control algorithms and theory for modular walking robots, manipulators, force sensors, and inkjet printing systems. Contributing for publication under Professor Howie Choset and Project Scientist Lu Li at the CMU Biorobotics Lab.

**Texas Instruments,** Analog Applications (2021 - 2024)
Applications Engineer for high current switching power regulator group specializing in design/test of multi-phase buck converter evaluation modules and closed loop feedback design with publications. Rotated through Power Design Services (PDS) on various custom power designs for Alpine, Tesla, Xilinx and Conti AG with over $15M revenue tied.

**Raytheon Technologies: Digital Hardware Intern** (Summer 2020)
Lab assistant and applications engineer for various digital hardware projects including power and thermal dissipation with aircraft-grade CLPDs and FPGA design.

**UCLA IEEE: Workshops Technical Lead** (2019)
Responsible for leading lectures, designing projects, and hosting technical workshops for outreach with UCLA's IEEE Branch. Topics: PCB Design, SMD Soldering, SPI, I2C, UART, Bluetooth

**Naval Postgraduate School: Research Intern** (Summer 2018)
Simulated and presented on the navigation of autonomous underwater vehicles using Simultaneous Localization and Mapping (SLAM) at the Center for Autonomous Vehicles

## PROJECTS GLIMPSE

**"EigenBot" - Modular Robot for Rapid Prototyping**
Pioneering distributed neural control on a custom modular robotic platform bioinspired by insect neural networks.

**"Twin Turbo Multiphase Board" - Reference Design**
Designed, assembled, and tested TI's stackable Buck Power IC up to 6 phases. Competed with industry standards of efficiency, load transient, and EMI.

**"Micromouse" - Embedded Maze Solving Robot**
Built from scratch robot with IR Sensors, wheel encoders; implemented PID and Floodfill in C. 1st Place Rookies (UCLA 2019), 3rd Place (UCSD 2019)

## PUBLICATIONS

[1] Zhang, Zhikai, Siqi Guo, Henry Kou, Ishayu Shikhare, Howie Choset, and Lu Li. "Bio-Inspired Distributed Neural Locomotion Controller (D-NLC) for Robust Locomotion and Emergent Behaviors." Atlanta, Georgia, 2025.

[2] H. Kou and P. Shalton, "EVM User's Guide: TPSM64406EVM TPSM64406EVM 36-V, Dual, 3-A Output, Synchronous, Buck Module," Texas Instruments, Nov. 2023. Available: https://www.ti.com/lit/ug/slvuct0/slvuct0.pdf

[3] E. Lee and H. Kou, "User's Guide LMQ644A2-Q1 6-Phase Buck Regulator Design for Automotive ADAS Applications," Texas Instruments, Jul. 2023. Available: https://www.ti.com/lit/pdf/snvaa32

[4] H. Kou and J. Hua, "User's Guide LMR54450-Q1 36-V, 5-A Buck Converter Evaluation Module," Texas Instruments, Jun. 2022. Available: https://www.ti.com/lit/pdf/slvucf0

[5] M. Davis-Marsh and H. Kou, "TPSM64404/06 3-V to 36-V, Low IQ, Dual 2/3-A Module Optimized for Power Density and Low EMI," Texas Instruments, Dec. 2023. Available: https://www.ti.com/lit/gpn/TPSM64406

## AWARDS

2021 - UCLA IDEAHacks 2nd Place: Gnome
2020 - UCLA IDEAHacks Honorary Mention: Salt-o-matic
2019 - California Micromouse Competition at UCSD Third Place: Team HITB
2019 - All American Micromouse Competition at UCLA First Place 1st Year: Team O
2016 - Silicon Valley Regional Team 2035 FRC Chairman's Award
2014 - Silicon Valley Regional Team 2035 FRC Engineering Inspiration Award