HUICONG DENG

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EDUCATION

University of Chinese Academy of Sciences *Sept. 2020 - now*
B.Eng. Electronic Information Engineering GPA: 3.94 rank:1/40
Coursework: Nonlinear electronic circuits, Electromagnetic Fields and Waves, Electrodynamics
University of California, Berkeley *Jan. 2023 - now*
Exchange student Electrical Engineering GPA: 4.0
Coursework: Analog integrated circuits, Integrated circuits devices, Microfabrication technology

ACADEMIC EXPERIENCE

surface micromachining for MEMS resonant pressure sensor *Aug. 2023 - now*
Aerospace Information Research Institute, Chinese Academy of Sciences, Prof. Junbo Wang
- Design the process flow for surface micromachining of a MEMS resonant pressure sensor.
- Design the devcie and simulation using solidworks and ansys workbench.
- Implement fabrication of the device in ultra clean room.

piezoelectric micro-speaker *Apr. 2023 - Aug. 2023*
UC Berkeley, Department of mechanical engineering, Prof. Liwei Lin
- Review of the implementation of piezoelectric micro-speaker
- Design new control methods and packaging method to improve the low-frequency performance
- Conduct simulation with Comsol multiphysics to validate the idea
- Measure the resonant frequency, output sound pressure level, harmonic distortion, power efficiency of the micro-speaker

PMUT Mid-air thermal display *Jan. 2023 - Apr. 2023*
UC Berkeley, Department of mechanical engineering, Prof. Liwei Lin
- Learn the fundamentals of PMUT and the principle of the application in thermal display
- Design the experiment setup and choose the appropriate heating material
- Measure the Temperature variation due to ultrasonic waves emitted by the device, recording the heating process and make them into plot

Closed-Loop Control for the Resonant MEMS Pressure Sensor *Jul. 2022 - Sept. 2022*
Aerospace Information Research Institute, Chinese Academy of Sciences, Prof. Junbo Wang
- Study the fundamentals of resonant MEMS pressure sensor.
- Design the readout circuits including pre amplifier, filter, AGC circuits, and rectifying circuit
- Design the PCB and test it with MEMS sensor
- Sucessfully enhance the performance of the system,lower the complexity of circuits and the cost

PUBLICATION

[Published] Xia, F., **Deng, H.**, Yue, W., Peng, Y., Arakawa, R., & Lin, L. (2023, September). PMUT Array for Mid-Air Thermal Display. In 2023 IEEE International Ultrasonics Symposium (IUS) (pp. 1-3). IEEE. (co-first author)

ACTIVITIES

Peer tutor, University of Chinese Academy of Sciences *Aug. 2022- Jan. 2023*
Provide tailored, one-on-one tutoring sessions for undergraduate students in circuitry-related courses

Peer advisor, University of Chinese Academy of Sciences *anticipated Aug. 2023- Jun. 2024*
Provide major-related sessions for freshman undergraduate students, as well as proving long-term tutorial for their academic courses

Teaching assistant, University of Chinese Academy of Sciences *Sept. 2023- Jan. 2024*
Teaching assistant in Nonlinear Circuits lab.Provide tutorials on PCB design, how to use network analyser and other nonlinear circuits experiments

Half Marathon, Beijing Laoshan International Marathon *Nov. 2020*
completed half marathon in 1h 33min, excellent grade for non-professional athlete

SKILLS

Fundamental knowledge
circuits design, siganl processing, physics

Programming Languages and Frameworks
C, Matlab, Mathematica, verilog, Latex

professional software
Comsol Multiphysics,Ansys, Altium Designer, Cadence virtuoso, Capture CIS, Allegro, Pspice, Solidworks

experimental skills
microfabrication skills in ultra-clean room, Labview automatically controlled experiments

Language
TOEFL:103 (R:28, L:26, S:22, W:27) GRE:N/A

AWARDS AND SCHOLARSHIPS

First class scholarship, University of Chinese Academy of Sciences *3 times, 2021 & 2022 & 2023*
The highest scholarship for undergraduate students with top 5% academic performance in UCAS

National scholarship, Ministry of Education of the People's Republic of China *2023*
The scholarship for excellent academic performance awarded by China, 14 in total 1600 undergraduates in UCAS

UCAS Overseas Graduate Studies Fellowship Program, University of Chinese Academy of Sciences *2023*
My home university UCAS will cover my first year's tuition and fees and provide me $2000 each month.