Yuanhao Chen

(He/Him/His)
707 East 6th Street, Tempe, AZ 85281
571–426–1806 yche1066@asu.edu linkedin.com/in/yuanhao-chen-9a2a0b219/

Education

Arizona State University **Jan. 2023 – Present**
Master of Science in Mechanical and Aerospace Engineering *GPA: 3.83*

Southern Illinois University Edwardsville **Aug. 2019 – May. 2022**
Bachelor of Science in Mechatronics and Robotics Engineering *GPA: 3.42*

- The University Dean's List
- Member of the Honor Society of Phi Kappa Phi

Research Interests

Robotic modeling and control, Human-Robot interacting, Machine learning, Bio-robotics

Research Experience

Arizona State University | *Neuromuscular Control and Human Robotics Laboratory* **May 2023 – Present**

- Designing a comprehensive experimental framework to assess the stability enhancement of a back-support device with variable stiffness settings during several tasks.
- Employing statistical methods to analyze the biomechanical impact of the device.
- Conducting quantitative evaluations to establish a correlation between the device's stiffness and the dynamic balance.

Xi'an Jiaotong University | *Wearable Health Monitoring Team* **July 2022 – August 2023**

- Developed a high-performance Shallow ConvNet model to accurately classify epileptic electroencephalogram signals.
- Developed a novel control method for enhancing the performance of nonlinear motor systems.

Projects

Clairvoyance: Vision-Impaired Friendly Assistive Mobile Device | *Python, TensorFlow* **April 2022**

- Assisted in designing and embedding a GPS system, achieving an accuracy of less than 10 cm.
- Selected sensors and cameras that met accuracy requirements and were easy to maintain.
- Programmed the camera to recognize traffic lights and zebra crossings, setting the sensor's alarm range accordingly.

Conveyor Operating System | *PLC, Visual Basic* **February 2022**

- Established the entire conveyor mechanical system, incorporating conveyors, sensors, air pumps, and controllers.
- Developed a multifunctional ladder program to ensure the conveyor operated as intended.
- Developed a user interface in Visual Basic and Corsair HMI for system control.

Automatic Curtain | *C, C++* **May 2021**

- Designed the control system's program logic and circuit diagram using PSoC 5.
- Configured the circuit to enable the system to operate in both time-driven and manual modes.
- Chose and assembled the stepper motor and curtain materials to fulfill the required functions.

Publications

[1] **Y. Chen**, Y. Xu, X. Wang, "A Novel Model for Heart Beating Rhythms", *ASME 2024 International Mechanical Engineering Congress and Exposition*, Jul. 2024, ISSN: 0402-1215. (Accepted)

[2] **Y. Chen**, Y. Xu, X. Wang, *et al.*, "Nonlinear Vibration and Bifurcations of a Bending-Twisting Rotor System", *ASME 2024 International Mechanical Engineering Congress and Exposition*, Jun. 2024, ISSN: 0402-1215. (Accepted)

[3] **Y. Chen**, Z. Zhan, "Clairvoyance – vision-impaired friendly assistive mobile device", *Applied and Computational Engineering*, Feb. 2024, ISSN: 2755-2721.

[4] **Y. Chen**, "Instructional design of obstacle-dependent Gaussian potential field (ODG-PF) based obstacle avoidance robot design", *Fenghui*, Sept. 2021, ISSN: 2095-2511. (In Chinese)

Skills and Interests

Programming: C, C++, Matlab, Python, R, FPGA, VB, PLC.
Software: Arduino, OpenSim, Vicon Nexus, LTspice, LabView, PSoC Creator.
Interests: Playing the piano, board games, tennis, outdoor activities.