Yan Yan

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EDUCATION

Master of Biomedical Engineering, University Basel, Switzerland 09.2023–Present
Core Course: Systems and Control, Robotics, MRI & Medical Image Processing, Computer-Assisted Surgery, Signal Processing, Neurotechnology, Biomaterials, Statistics

B.Sc., Dental Technology, West China School of Stomatology, Sichuan University, China 09.2020-06.2023

- First-class Scholarship for Academic Year 2021-2022, Sichuan University
- Second-class Scholarship for Academic Year 2020-2021, Sichuan University
- Merit Student, Academic Year 2020-2021, Sichuan University
- SCU-PolyU Scholarship for Academic Year 2020-2021

Mathematics, Sichuan University, China 09.2019-07.2020

- Second-class Scholarship for Academic Year 2019-2020, Sichuan University

RESEARCH

Self-locking Cuff Electrodes for the Nerve Stimulation 10.2024-Present
Semester Project, Multi-Scale Robotics Laboratory, D-MAVT, ETH

- Developed a wireless, self-locking nerve cuff electrode tailored for nerve stimulation, based on a PNIPAM/PEGDA bi-layer hydrogel system with thermoresponsive properties.
- Engineered and optimized hydrogel formulation and bilayer mechanical structure to enable tuneable cuff curvature for nerves of varying diameters.
- Utilized the lab custom-built 3D printer for precise fabrication and structural prototyping.

Course Project: Automated Ball Shooting System, Bio-Inspired Robots for Medicine-Lab, Unibas 04.2024-06.2024

- Developed a PD-controlled ball launching platform with real-time control via Simulink Stateflow and Beckhoff TwinCAT 3, optimized using a multi-phase trajectory strategy.
- Integrated infrared and piezoelectric sensors to detect successful throws and impacts for closed-loop performance evaluation.

Course Project: Exam Scheduler Optimization 05.2024-06.2024

- Developed and implemented Simulated Annealing and Genetic Algorithm approaches to solve the university final exam scheduling problem. Incorporated a penalty-based constraint handling mechanism to ensure feasible and efficient exam timetables.

Course Project: Phone Tracking in Homogeneous Magnetic Field 03.2024-06.2024

- Built a 3D magnetic tracking system using smartphone Hall sensors and PCB-based Helmholtz coils; implemented quadrilateration and lookup-table-based localization with sub-centimeter accuracy.

INTERNSHIP

***Intern*, Chengdu DT Denture Technology Development Co., Ltd., China** 02.2023-06.2023

- Fabricated dentition using dental CAD software (exocad, 3Shape) and CAM technology

***Intern*, West China Hospital of Stomatology, Sichuan University, National Center of Stomatology** 07.2022-06.2023

- Conducted intraoral, facial, and electronic facebow scanning.
- Aligned dentition with facial reconstruction to simulate treatment outcome and aesthetic prediction.

***Intern*, Chengdu Boltzmann Zhibei Intelligence Technology Co., Ltd., China** 06.2021-09.2021

- Assisted in CBCT-based dentition segmentation, landmark annotation, and software testing for a deep learning project.
- **Contributed to the publication "Deep Learning Based Quantitative Cervical Vertebral Maturation Analysis"(Doi: 10.1186/s13005-025-00498-6. PMID: 40140932; PMCID: PMC11938625).**

Yan Yan (Participant), et al. "Microorganisms: Enemies and Friends" 10.2020-05.2021

- One of the participants of popular science books

SKILLS & INTERESTS

Language: Mandarin (native), English (proficient), German (basic)
Technical Skills: Python, SPSS, MATLAB/Simulink, COMSOL, C, AutoCAD, OnShape
Interests: Reading, Swimming, Travelling, Hiking