

Tang Hao-Yuan

6F, No. 218, Section 2, Xintai 5th Road, Xizhi District, New Taipei City 221, Taiwan
(+886) 0972798689 | wf1497b@gmail.com | [website: wf1497c.github.io](http://website.wf1497c.github.io)

EDUCATION

Taipei Medical University (TMU)

Taipei, Taiwan

Master of Science in Biomaterials and Tissue Engineering

Expected: July 2021

- Overall GPA: 3.94/4.0

TMU

Taipei, Taiwan

Bachelor of Science in Biomedical Engineering (BME)

Sept 2016 – July 2020

- Overall GPA: 3.62/4.0; Last 60 GPA: 3.90/4.0

CONFERENCE PROCEEDINGS

Chen, P.Y., Tang, H.Y., Pai, C.A., Ho, C.Y., and Chen, H.H. “Brain Responses from Heading a Soccer by Corner Kick in Different Areas of the Penalty Box.” 21st International Conf. on Mechanics in Medicine and Biology, Taipei, Taiwan, Nov. 22-24, 2018.

Tang, H.Y., Chen, P.Y., Hu, C.J., and Chen, H.H. “A Biomechanical Study on the Risk of Sustaining Concussions from Soccer Heading Influenced by Heading Technique and Frequency.” 3rd Global Conf. on Biomedical Engineering, Taoyuan, Taiwan, Nov. 30-Dec. 3, 2018.

Chen, H.H., Tang, H.Y., and Pai, C.A. “Design and Finite Element Analysis of Suture Anchors for Soft-tissue Repair.” International Conf. in International Society of Biomechanics/American Society of Biomechanics, Calgary, Canada, July 31-Aug. 4, 2019.

Tang, H.Y., Pai, C.A., Ho, C.Y., and Chen, H.H. “Design and Evaluation of a New Device and its Surgical Instrument for Soft-tissue Repair.” 9th World Congress on Bioengineering, Taipei, Taiwan, Aug. 16-19, 2019.

Hsu, J.Y., Tang, H.Y., Chang, C.C., and Chen, H.H. “Effects of Helmet Weight and Seat Angle on Spinal Loading of Aviators under High G-Force.” 10th Asian-Pacific Association for Biomechanics, Taipei, Taiwan, Nov. 1-3, 2019.

Su, T.Y., Tang, H.Y., Gauthier, L., and Chen, H.H. “Design and Finite Element Analysis of Interference Screw for ACL Repair.” 10th Asian-Pacific Association of Biomechanics, Taipei, Taiwan, Nov. 1-3, 2019.

Tang, H.Y., Ho, C.Y., and Chen, H.H. “An Artificial Intelligence System with Wearable Devices for Correction of Inadequate Posture.” 4th Global Conf. on Biomedical Engineering, Taipei, Taiwan, Nov. 12-14, 2020.

JOURNAL PUBLICATIONS

Tang, H.Y., Su, T.Y., and Chen, H.H. “Design and Development of Magnesium-Based Suture Anchor for Rotator Cuff Repair Based on Finite Element Analysis and In-Vitro Test.” Journal of Biomedical Engineering (Submitted)

Tang, H.Y., Lin, Y.C., Su, T.Y., and Chen, H.H. “Kinematics of Shoulders with Rotator Cuff Repair Using New Suture Anchors in an Animal Model.” Journal of Biomedical Engineering (In preparation)

Tang Hao-Yuan

6F, No. 218, Section 2, Xintai 5th Road, Xizhi District, New Taipei City 221, Taiwan

(+886) 0972798689 | wf1497b@gmail.com | [website: wf1497c.github.io](http://website.wf1497c.github.io)

RESEARCH PROJECTS

Research Assistant, Ministry of Education, Taipei, Taiwan

June 2018 – May 2019

Design and Biomechanical Evaluation of Biodegradable, Biocompatible, and Osteoconductive Magnesium Interference Screw for Anterior Cruciate Ligament

- Collaborated on a project to design a new interference screw for anterior cruciate ligament repair
- Designed screws, performed finite element analysis, arranged data, and wrote and edited reports

Research Assistant, Ministry of Science and Technology (MOST), R.O.C.

June 2018 – Present

Studies on Biodegradable Mg-based Metallic Glass for Developing a New Suture Anchor Useful in Sports Medicine

- Worked on a project to design a new suture anchor for rotator cuff repair
- Designed screws, performed finite element analysis, evaluated anchor effectiveness using porcine shoulder joints and robotic arm, and processed data in MATLAB
- Arranged data, prepared conference presentation and project progress report, and wrote 2 articles

Design and Evaluate a Surgical Tool of Suture Anchor Insertion in Osteoporosis Group

- Contributed to design of a suture anchor surgical tool with torque-controlled mechanism
- Wrote research proposal, designed handle, performed finite element analysis, and manufactured handle with 3D printing
- Evaluated with test machine, arranged data, and prepared and published one US patent

Evaluating a Spine Curve Monitoring System of Wearable Devices

- Assisted with designing a wearable device composed of inertial measurement units (IMUs) and detected upper body posture using machine learning-based algorithms
- Wrote project proposal, designed system, processed data and implemented algorithms using MATLAB, and conducted human trials
- Arranged data, prepared conference, and wrote reports

Biomechanical Comparison of Warm-up Strategies for Preventing Achilles Tendon Injury

- Compared different warm-up strategies and used ultrasound imaging to evaluate biomechanical functions of Achilles tendon
- Used ultrasound image analysis software EchoPAC to measure material properties of tissue and arranged data

Effects of Head Impact on Postural Stability of Contact-Sport Players

- Conducted finite element and motion analyses to evaluate concussions of soccer players when heading
- Arranged data and prepared conference presentation

SKILLS

- *Programming:* MATLAB (Advanced)
- *CAD/CAE:* SolidWorks, AutoCAD, LS-DYNA and ANSYS (Proficient)
- *Machine Learning:* Python with PyTorch and Keras (Advanced)
- *Other Engineering:* C++, Arduino, LabVIEW, SPSS, and html (Intermediate)
- *Product Design:* Excellent fundamentals and experience followed ASTM, FDA, and US patent

Tang Hao-Yuan

6F, No. 218, Section 2, Xintai 5th Road, Xizhi District, New Taipei City 221, Taiwan

(+886) 0972798689 | wf1497b@gmail.com | [website: wf1497c.github.io](http://website.wf1497c.github.io)

WORK EXPERIENCE

Taipei Medical University, Taipei, Taiwan July 2018 - Present

Teaching Assistant in General Physics & Experiment/ Human Factors Engineering/ Biomechanics

- Hosted office hours, led group discussions, and gave lecture for foreign students
- Corrected and scored assignments, mid-term exam, and final-term exam testing sheets

Research Assistant/Lab Manager July 2017 - Present

- Executed research projects, prepared conference presentations and articles, and wrote research project proposals for funding
- Supervised and reviewed lab work of undergraduate students, managed lab properties and tasks, and hosted weekly meetings

Dept. of Cardiovascular Diseases, Taipei City Hospital Yanming Branch, Taipei, Taiwan 2019

Intern

- Learned procedure and provided proposal to improve surgical instruments of catheterization
- Discussed paper with chief doctor in department

Biomedical Tech. & Device Research Labs, Industrial Tech. Research Institute, Hsinchu, Taiwan 2019

Intern

- Researched relevant papers on wearable heartbeat analyzer and developed procedure for heart rate calculation based on heart voice by sensors
- Applied machine learning-based algorithms to evaluate performance

EXTRACURRICULAR ACTIVITIES

Graduation Representative of Undergraduate Students, BME Dept., TMU Sept 2019 – June 2020

Teaching Volunteer, Yong Ji Elementary School, Taipei, Taiwan Feb 2018 – Aug 2018

HONORS & AWARDS

Best Oral Presentation Award, International Conf. on Mechanics in Medicine and Biology 2018

- Selected to participate and presented at this interdisciplinary forum of engineers, medicos, and biologists from all over the world to share and discuss ideas

College Student Research Scholarship, MOST, Taiwan July 2018 – Feb 2019

- Awarded to 3 undergraduate students in TMU College of BME that year

2nd Prize, Student Research Project Contest, BME Department, TMU Apr 2019

- Gave oral presentation about undergraduate research project, competing with 10 outstanding students

Best Research Award, BME Department, TMU June 2020

- Awarded to 3 students based on all undergraduate students' research performance over 4 years

1st Prize and Most Popular Prize, 3-minute Oral Presentation Contest, CBME, TMU Sept 2020

- Selected for graduate research project/thesis presentation out of 15 graduate students