Jiyu Xie

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GitHub Projects: https://jiyu-xie.github.io/

EDUCATION

Southern University of Science and Technology (SUSTech) **Shenzhen**

Bachelor of Engineering in Robotics Engineering (GPA: 3.11/4.00) Expected 06/2019

Honours: University 3rd Prize Freshmen Scholarship; Outstanding Journalist Award

ACADEMIC EXPERIENCE

Swimming Micro/Nano-Robotics' Lab, SUSTech, Cantonese Students' platform for innovation and entrepreneurship training programme, funded by the Chinese Ministry of Education

Team Leader, Advisor: Professor U Kei Cheang **Shenzhen**

Precise Tumor Treatment Fabrication and Manipulation of Micro/Nano-Robotics 03/2018 – Present

- Built a Helmholtz Coil CAD model of the magnetic control microscope system by Solidworks
- Designed 12 nano-structure patterns by AutuCAD and 12 kinds of DNA nano-structure by caDNAno for robotic fabrication
- Improved the structural stability in 3D shape test and applied finite element modelling in CanDo to visualise how the skips and insertions affected the structure
- Fabricated the swimming nano-robotics with nano-imprinting and DNA origami techniques
- Characterized all the nano-structures by the gel electrophoresis and Transmission Electron Microscope and confirmed the viability of DNA strand mechanisms

Underwater Robotics' Lab, SUSTech, funded by the Chinese Ministry of Education

Team Member, Advisor: Professor Wende K **Shenzhen**

Modular Design and Applications of Remotely Operated Underwater Vehicle (ROV) 09/2017 – Present

- Built a CAD prototype of ROV (370 × 760 × 135 mm) and analyzed its stability with Solidworks
- Improved the stability of the ROV structure through SolidWorks simulation and hands-on testing
- Waterproofed the electronics through equipping the hull and frame with underwater switch, subsea connector, O-rings, and glues
- Fabricated and assembled the 3D-Printed ROV structure with ABS plastic
- Built a model that could swim over 1.0 m/s and reach depth above 3.0 m

Micro/Nano-Swimming-Robotics' Lab, SUSTech **Shenzhen**

Undergraduate Research Assistant, Advisor: Professor U Kei Cheang 07/2016 – Present

- Designed 24 micro-structure patterns by AutoCAD
- Optimized uniformity of the photoresist film, adhesiveness between underlay and glue film, exposal and develop condition
- Developed controllable process in fabricating the micro-swimming-robotics by photolithography

Human-Augmented Robotics Lab, SUSTech **Shenzhen**

Undergraduate Research Assistant, Advisor: Professor Chenglong Fu 09/2016 – 08/2016

- Helped build a foot prosthesis CAD model by Solidworks
- Explored the mechanical structure of a passive exoskeleton through gait analysis
- Investigated the Xsens MVN Arwinda® motion caption system on several key performances such as latency, output rate, battery life, and wireless range indoor/outdoor
- Found that the proven MVN biomechanical model and sensor fusion algorithms enabled the real-time, reliable, and accurate human motion analysis in challenging magnetically disturbed environments

Department of ME, Tsinghua University **Beijing**

Summer Research Programme, Advisor: Professor Gang Wang 07/2016 – 08/2016

- Developed the 3D Printing in Zero-G Technology
- Helped design a CAD model for the infinite build one-dimensional printer protocol by Solidworks
- Repaired a damaged 3D-printer (HORI®) and provided maintenance advice
- Demonstrated a proof-of-concept test of the properties of melt deposition modeling additive manufacturing in the microgravity environment, the printer prints at speeds which are typically in the range of 10–40 mm/sec

EXTRACURRICULAR ACTIVITIES

Woodworking Class **Shenzhen**

Member 06/2015 – 10/2018

- Learned the basic processes of the woodworking (e.g., drying, machining, assembly, pre-finishing)
- Handled a variety of woodworking machines (e.g., rough planer, cutoff saw, rip saw, router)
- Created chairs designed by Yu Watanabe, Hiromatsu Furniture, an antler clock, a wooden music box, and a wooden bowl from solid beech wood

3D-Printing Club **Shenzhen**

Member 09/2015 – 01/2017

- Learned the mechanisms of 3D printing and helped build a portable 3D-Printer with Arduino
- Designed a product using 3D Printing software, such as Tinkercad and Cura
- Co-hosted a variety of events, such as 3D-Printing Art show and Design-and-Print Competitions

Students' News Agency **Shenzhen**

Photographer 09/2015 – 01/2017

- Conducted interviews with the guests of SUSTech Lectures
- Elected as 2016 Excellent Agency Member of Students' News Agency

SKILLS AND INTERESTS

- Computer Skills: Computer Number Control (CNC), 3D-Printing, Woodworking, Nano-Imprinting, DNA Synthesis, TEM Imaging
- Programming Languages: Python, C/C++, Java, HTML5, MatLab/Simulink, NI LabView, LaTeX, Markdown
- Software: SolidWorks, AutoCAD, COMSOL, V-REP, ABB RobotStudio, MasterCAM, Maya, Origin, Office (Word, PowerPoint, Excel), Adobe (Photoshop, Illustrator, Premiere)
- Operating Systems: Linux, Windows, Git
- Interests: Woodworking, Photography, Hip-Hop Dance, Baking, Trekking, Painting, Sci-Fi