

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 AutoCAD and 12 kinds of DNA nano-structure by caDNAo 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, exposure 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 capture 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

09/2016 – 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 Numerical 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