**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