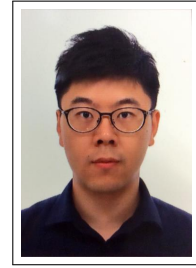


Song Chengzhi

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Summary

Solid training in robotics, mechatronics, and control theory. Research experience related to flexible robots with emphasis on both scientific and engineering aspects. Work experience related to implantable/disposable medical devices' development life-cycle. Efficient individual contributor, team leader, team member.

Education

The Chinese University of Hong Kong

PhD candidate, Surgery

Hong Kong

Aug.2016–July.2020(expected)

Interdisciplinary Program with Surgical Robotic Engineering

Advisors: Prof. Philip Waiyan, Chiu and Prof. Zheng, Li

Laboratory of Advanced Bio-Medical Robotics (ABMR)

The Johns Hopkins University

Visiting scholar

Baltimore,MD,US

Sep.2019–Apr.2020

Advisors: Prof. Russell H. Taylor and Prof. Peter Kazanzides

Laboratory for Computational Sensing and Robotics (LCSR)

Hong Kong University of Science and Technology

Master of Science, Electronic Engineering, GPA: 3.88

Hong Kong

Sep.2013– Jul.2014

Xiamen University

Bachelor of Science and Technology, Automation

Xiamen, China

Sep.2009–Jul.2013

Industrial & Research Experience

Dept. of Mechanical and Automation Engineering, CUHK

Research Assistant

Hong Kong

Dec. 2015–Aug. 2016

Build up control platforms for flexible manipulators from scratch. GUI design with C# to communicate with low-level controller, reading the video stream from endoscope.

Seemine Medical Device Company

Researcher and Developer

Lanzhou, China

Feb.–Dec. 2015

Leading development of Ni–Ti Shape Memory Alloy (SMA) medical device for lung tumor removal postoperative rib bone fixation.

DJI Shenzhen DaJiang Innovation Technology Company

Intern Developer in Vision Group

Shenzhen, China

Jun.–Sep. 2014

Motion planning of Unmanned Aerial Vehicle(UAV), implementation of Vector Field Histogram (VFH/VFH+) algorithm for obstacle avoidance based on ROS, vision module setup on UAV.

Dept. of Electronic Engineering, HKUST

Research Assistant

Hong Kong

Apr. –Jun. 2014

Study control algorithm and implement on pix-hawk control board

Professional skills

Expertise area: Medical Robotics, Flexible Robot Kinematics Modeling, Visual Servo.

Programming Languages: C/C++, MATLAB, L^AT_EX, also basic ability with: C#, Python.

Packages: OpenCV, FFmpeg, ROS, Eigen, QT, Github etc

Software: Visual Studio Code, Linux, ROS, Solidworks, MATLAB, Sublime, Microsoft Office, etc.

Development Platforms: Da-Vinci Research Kit(dVRK), Pix-Hawk, Arduino, etc.

General Skills: Good presentation skills, good spirit of teamwork, Chinese (Native), English (Fluent).

Code Samples

Model Simulation platform

Simulation platform for the flexible manipulator modelling

<https://github.com/ChengzhiSONG/Simulation>

Visual servo control of the flexible manipulator on dVRk

Develop, design, and implement the closed loop control with vision

<https://github.com/ChengzhiSONG/VisualServo-Flexible>

Selected Publications

For a full list of publications, please refer to [Google Scholar](#)

1. **Chengzhi Song**, Ivan Shuenshing Mok, Philip Waiyan Chiu, Zheng Li "A Novel Tele-operated Flexible Manipulator Based on the da-Vinci Research Kit" *13th World Congress on Intelligent Control and Automation (WCICA)* pp. 428-432. 2018.
2. **Chengzhi Song**, Xin Ma, Xianfeng Xia, Philip Wai Yan Chiu, Charing Ching Ning Chong, and Zheng Li. "A robotic flexible endoscope with shared autonomy: a study of mockup cholecystectomy." *Surgical endoscopy* pp. 1-12. 2019.
3. Ma, Xin, **Chengzhi Song**, Philip Waiyan Chiu, and Zheng Li. "Visual Servo of a 6-DOF Robotic Stereo Flexible Endoscope Based on da Vincix Research Kit (dVRK) System." *IEEE Robotics and Automation Letters* 5, no. 2: 820-827. 2020.

Teaching Experience

Medical Robotics, BMEG 5750 by Prof. Li
Teaching Assistant

Hong Kong
Spring 2019

Awards

Best Collision Avoidance Competition
International Aerial Robotics Competition

Shandong, China
Aug. 2014

Best Technical Paper Award
International Aerial Robotics Competition

Shandong, China
Aug. 2014

Best Performance Award
Course Project: Design of a 16-bit adder, from design to layout

Hong Kong
Dec. 2013

Excellent Student Elite
Xiamen University

Xiamen, China
2010 – 2011

The 3rd-prize Scholarship, Excellent League Member
Xiamen University, Communist Youth League of China

Xiamen, China
2009 – 2010