

Wang Jiaqi (Oct.11, 2000)

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EDUCATION BACKGROUND

XIDIAN University Project 211 09/2018-07/2022

Major: Mechanical Design Manufacture and Automation **Weighted Score (GPA):** 3.6/4.0 (rank 8%)

Core Courses: *Graphics Basics and Computer Drawing, Automatic Control Principle, Introduction to Engineering, Fundamentals of Analog Electronic Technology, Introduction of Computer and Program Design, Robot Simulation and Programming, Industrial Big Data, Advanced Mathematics, Digital Circuits and Logic Design, Machine Design, Robotic Technology, Microcomputer Principle and System Design;*

The Chinese University of Hong Kong, Shenzhen Research Assistant 12/2021-08/2023

Laboratory: Medical Micro Robotics Lab **Supervisor:** Zhuoran Zhang

AWARDS AND HONOURS

China International "Internet+" University Students Innovation and Entrepreneurship Competition;
Third Prize of the 12th Shaanxi Province Industrial Engineering Improvement Creativity Competition;

“Honorable Mention” in Mathematical Contest in Modeling;

Second Prize of National College Students Mathematical Contest in Modeling in Shaanxi Province;

Outstanding Student of XIDIAN University in three years (Top 5%);

First Prize of Mechanical Innovation Design Competition in Shaanxi Province (Top 5%);

Outstanding Graduates of XIDIAN University (Top 5%);

PUBLICATIONS

Jiang A, **Wang J**, Zhao H, et al. Identifying Viability of Immotile Sperm at One Glance: Sperm Viability Classifier Powered by Deep Learning. *Fertility and Sterility*, 2022;

Wang J, Chen J, Zhang Z. Estimating End-Effector 3D Position using a Single Monocular Microscopic Image for Robotic Micromanipulation. *IEEE International Conference on Robotics and Biomimetics*, 2022;

Chen J, **Wang J**, Zhang Z. Estimating Z-position of Motile Cells for Robotic Cell Manipulation. *IEEE Cyborg and Bionic Systems*, 2022;

Wang J, Chen J, Wang C, Zhang Z. Machine Learning-based Depth Prediction of End-Effector for 3D Robotic Micromanipulation. *IEEE Cyborg and Bionic Systems*, 2022;

Wang J, Jiang A, Chen W, et al. Testing The Reproducibility and Effectiveness of Deep Learning Models among Clinics: Deep Learning-Based Sperm Counting as a Pilot Study, *NPJ digital medicine*, 2023; (Under review)

Jiang A, Hao M, Li Y, **Wang J**, et al. Automated Point-of-Care Semen Analysis Using Smartphone Imaging and Occlusion-Aware Multi-Object Tracking. *IEEE Transactions on Automation Science and Engineering*, 2023; (Under review)

Dai W, Liu R, **Wang J**, et al; Automated Non-invasive Analysis of Multiple Sperms Using Cross-scale Guided Network. *IEEE International Conference on Robotics and Automation*, 2024. (Submitted)

PROJECT EXPERIENCES

Project 1: Big Data Analysis of Shield Machine's Error Correction 10/2019-10/2021

- The system mainly solves the problem of how to correct the deviation between the current route and the designed route when the shield machine faces different environments;
- Acted as the project leader and in charge of eliminating useless data, setting new data packages, establishing axis deviation prediction model, geometric correction and correlation model;
- Extracted feature importance of construction parameter; the prediction accuracy rate of the shield

- machine track axis reached 99.63%;
- The shield remote monitoring system has reached cooperation with the construction party of Xi'an Metro Line 5, Dalian Metro and Ningbo Metro and made a profit of 6 million.

Project 2: Somatosensory Wearable Mechanical Gloves 01/2020-11/2020

- To help the elderly people with weak hands pick up heavy objects;
- Responsible for mechanical structure design and 3D modeling, motion simulation and stress analysis; used laser cutting and 3D printing for model making;
- Comparing with existing domestic products with the same function, our product is more lighter and easy to wear and operate.

Project 3: TFT-LCD Product Quality Prediction for Process Flow 09/2020-12/2020

- Exploit machine production parameters to predict the quality of products to achieve immediate and comprehensive production results, and conduct more precise process inspections;
- Use the Recursive Feature Elimination (RFE) model to score features and extract features with relatively high importance;
- Make use of random forest algorithm and support vector regression machine algorithm to establish a product quality prediction model.

Project 4: Digital Remote Monitoring--Intelligent Traffic Detection System 03/2021-07/2021

- An intelligent traffic monitoring system for real-time monitoring and information recording;
- Vehicle detection based on YOLO algorithm regression, character recognition based on CNN network structure and algorithm development;
- The accuracy rate of information detection is above 99%, and a preliminary cooperation intention has reached with the Traffic Management Bureau of Yanta District, Xi'an

INTERNSHIP EXPERIENCES

Siemens Industrial Software (Shanghai) Co., Ltd. Shaanxi, China 01/2021-02/2021

Position: Teamcenter Product Development Internship

- Responsible for the secondary development and post-checking of functions in Teamcenter for enterprise needs;
- Preliminary data processing: interacted with clients for feed backs and assisted technical consultants in determining functional requirements and application logic;
- Responsible for setting relevant functional test data, and assisting clients in application data migration.

Shaanxi Pingfang Qingchuang Technology Co., Ltd. Shaanxi, China 07/2021-09/2021

Position: Mechanical Structure Designer

- Four-legged robot foot perception, and its unstructured terrain adaption under variable gait and stability adjustment of variable gait;
- Participate in the design of a multi-dimensional information acquisition system of a robot.

OTHER SKILLS

Hardware: Familiar with Raspberry Pi development

Software: Master user of Python, MATLAB and SolidWorks

Design: Proficiency in Microsoft Suite including Word, Power Point, Latex and other office software; adept in producing catchy slides; skilled at scientific research drawing

Technology Development: Strong project development capabilities and can independently carry out program unit design and development, source code writing, and functional testing

Project Management: Sufficient teamwork and project management skills, experienced in project management software, and strong innovation-driven capabilities