

RESEARCH INTERESTS

Bioinformatics, Computational Genomics, Intelligent control and embedded systems, Machine learning

EDUCATION

The Chinese University of Hong Kong

M.phil in Chemical Pathology

Hong Kong

Jan. 2025-Dec. 2026 (Exp)

Jilin University

B.Eng in Mechanical Engineering

Changchun, China

Aug. 2014-Jun. 2018

PUBLICATIONS & PATENTS

- Zhu G, Jiang P, **Li X**, et al. Methylation-Associated Nucleosomal Patterns of Cell-Free DNA in Cancer Patients and Pregnant Women[J].*Clinical Chemistry* 70.11 (2024): 1355-1365.
- **Xingqian Li***, Chenwei Lou, Jian Zhao, HuaPeng Wei, Hongwei Zhao. "Tom" pet robot applied to urban autism[J]. arXiv preprint arXiv:1905.05652, 2019.
- Chenwei Lou, Jian Zhao, **Xingqian Li***, Huapeng Wei, Yuanbo Zhang, Hongwei Zhao. Pet Robot Emotional Interaction for Urban Autism[C]//*Proceedings of the 2019 2nd International Conference on Intelligent Science and Technology*. 2019: 1-6.
- Chenwei Lou, Huapeng Wei, **Xingqian Li***, Jian Zhao, Xiangbin Liu, Hongwei Zhao. Tom-Talker: Pet Robot Social Incentive System for Urban Autism[C]//*Proceedings of the 2019 International Electronics Communication Conference*. 2019: 60-64.
- Jianrong Zhang, Jinkai Zhang, **Xingqian Li***, Xiaomin Li, Yan Zhang, Hongwei Zhao. Path Planning Method of Sweeping Robot Based on Beacon Positioning[C]//*Proceedings of the 2nd International Conference on Computer Science and Application Engineering*. ACM, 2018: 122.
- Haohua Duan, Zhengtao Wang, Yangyang Liu, **Xingqian Li**, Hexiang Huang, Hongwei Zhao*. IWCA Algorithm for Clustered Drone Information Transmission Network[C]//*2018 5th International Conference on Soft Computing Machine Intelligence (ISCM)*. IEEE, 2018: 119-122.
- **Xingqian Li***, Jianjun Wang, Haoyu Zhao, Peijun Xia, Hongwei Zhao. Face Recognition for Intelligent Robot Safety Verification System. //*Proceedings of the 2017 International Conference on Computer Science and Artificial Intelligence*. ACM.2017/09/13.
- Jianjun Wang, **Xingqian Li***, Shutong Shi, Siyu Lin, Hongwei Zhao. Comprehensive Evaluation of Autonomous Navigation Based on Multi Model.//*Proceedings of the 2017 International Conference on Information Technology*. ACM.2017/10/01.
- Jianjun Wang, **Xingqian Li***, Haoyu Zhao, Ziguoxu Xu, Hongwei Zhao. Intelligent Robot Safety Control System Based on MFC.//*Proceedings of the 2017 International Conference on Robotics and Artificial Intelligence*. ACM.2017/10/05.
- Hong Zhai, **Xingqian Li**, Lingyu Chen, Yunlong Zhu, HongWei Zhao*. A Method for Improving the Attitude Calculations Fault Tolerance Rate by Using Hardware + Software. 3rd Annual International Conference on Electronics, Electrical Engineering and Information Science (EEEIS 2017).2017/08/21.
- Feng Han, **Xingqian Li***, Jianjun Wang, Guanlong Qu. Geometric Visualization Interaction System Based on Augmented Reality.3rd Annual International Conference on Electronics, Electrical Engineering and Information Science (EEEIS2017).2017/08/21.
- Xin Ding, **Xingqian Li**, Yue Zhang, Zhiping Sun, Hong-wei Zhao*. IOT Intelligent Robot's Information Collection and Device Control System.*Artificial Intelligence*.2017/07/16.
- Juan Liang, Haoyu Zhao, **Xingqian Li**, Hongwei Zhao*. Face Recognition System Based on Deep Residual Network.3rd Workshop on Advanced Research and Technology in Industry Applications (WARTIA 2017).2017/08/23.
- Ridong Han, Jianjun Wang, **Xingqian Li***. Local Search with Configuration Checking for PBS.//*Proceedings of the 2017 International Conference on Computer Science and Artificial Intelligence*. ACM.2017/09/08.
- Jianjun Wang, Gaozhan Wang, **Xingqian Li***, Hongru Zhao, Hongwei Zhao. Analysis of Traffic Processing Efficiency Based on Cellular Automaton Model.*DEStech Transactions on Engineering and Technology Research*.2017/08/29.
- **Xingqian Li***, Xin Ding, Yue Zhang, Zhiping Sun, Hongwei Zhao. IoT family robot based on Raspberry Pi.*Information System and Artificial Intelligence (ISAI)*, 2016 International Conference on. IEEE.2016/6/24.

RESEARCH EXPERIENCE

- **The Chinese University of Hong Kong** Hong Kong
Research Assistant, Department of Chemical Pathology, Faculty of Medicine *Aug. 2019-Dec. 2024*
 - Developed a bioinformatics pipeline and database system for the diagnosis of nasopharyngeal carcinoma
 - Established a high-throughput distributed cluster computing task scheduling system for bioinformatics
 - Researched a multi-class cancer detection algorithm based on a deep learning model
 - Researched a nucleosomal footprinting cfDNA biomarker for the diagnosis of HCC
- **City University of Hong Kong** Hong Kong
Research Assistant, School of Creative Media *Sep. 2018-Apr. 2019 (Expected)*
 - Researched the latest technology in the field of human-computer interaction
 - Read the top conference papers of “CHI” and “UIST”, made a presentation and discussed ideas every week
 - Researched projects on circuit sketching and code generation and Minecraft Chinese historical building modeling
- **Institute of Neuroscience, Chinese Academy of Sciences** Shanghai, China
Visiting Intern, CAS Center for Excellence in Brain Science and Intelligence Technology *Sep. 2018*
 - Learned methods and techniques for applying neuroscience, applied science, and engineering to cognitive science
 - Researched using “labview” programming connection equipment to collect and process data during the experiment
- **Jilin University** Changchun, China
Research Assistant(Undergraduate Researcher), College of Computer Science and Technology *Apr. 2016-Aug. 2018*
 - Studied the intelligent control and embedded system with the Prof. Hongwei Zhao and his postgraduate
 - Applied for the undergraduate innovation projects with professor, funding CNY 11,000(USD 1,692), and obtained the special fund for industrial innovation of Jilin Province(2016C035) and the Natural Science Foundation of Jilin Province(20140101184JC)
 - Directed the undergraduate research team to conduct research and manage the funds during the research process
 - Organized undergraduate academic exchange meetings and directed them to publish academic results
 - Participated in the establishment of the robot dream workshop of Jilin University and organized the first robot competition of Jilin University
- **Jilin University** Changchun, China
Research Assistant, School of Mathematics *Apr. 2017-Jul. 2017*
 - Research on machine learning algorithms and computer graphics, 3D modeling methods
 - Researched a project to build a geometry generation system in an augmented reality device

MAIN PROJECT

- **A Data-driven Interactive Platform to Learn Physical Computing** Hong Kong
School of Creative Media, City University of Hong Kong *Mar. 2018-Jan. 2019(Expected)*
 - Designed an A Data-driven Interactive Platform aim to allow young artists to perform learn physical computing without any physical basis and engineering foundation
 - Built a set of user interaction language, allowing users to design physical circuit systems by drawing some simple symbols in the sketch, such as triangles, circles
 - Developed a circuit generation system that understood the user-designed circuit sketches and built the corresponding electronic components, and then wired the electronic components in a logical relationship
 - Encoded an automatic code generation mechanism that drives the user’s circuit in the above operation and its corresponding logic generation circuit to drive the code, enabling the circuit to perform effective functions

- **3D-model-based Data Mining in Minecraft + Game-based Chinese History Learning** Hong Kong
School of Creative Media, City University of Hong Kong *Mar.-Aug. 2018*

 - Designed a 3D model Minecraft plugin based on Chinese history learning and data mining to solve the boring problem of children in the process of learning Chinese history
 - Implemented the plugin running in minecraft, obtained the location of the model and saved the model, and extracted the characteristics of the model
 - Calculated the distance between the characteristics of the model and the features of the Chinese historical model of the existing data, and established the label and feature vector of the database storage model
 - Encoded the model retrieval system, extracted from the database to the closest model according to the degree of matching, imported into Minecraft through plugin for further rendering

- **“Tom” Intelligent Robot Pets** Changchun, China
College of Computer Science and Technology, Jilin University *May.-Sep. 2018*

 - Designed a smart pet robot that aims to solve the social phobia problem that people have in the process of growing up, it stimulates the user to socialize through the robot pet, and the robot also interacts with humans emotionally
 - Established a social incentive network for pet robots, which encourages users to socialize with other users through games, and gives effective reward feedback, while recommending other users to become friends
 - Implemented the emotional interaction between the user and the pet robot, by constructing a computer vision function in the pet robot system, the user’s current facial expression is judged to understand the current user’s emotion, and the animal emotion is simulated to feedback the user
 - Conducted related experiments and demonstrated the results, and publish paper.

- **Campus Patrol Quadrotor** Changchun, China
College of Computer Science and Technology, Jilin University *Mar. 2017-Jan. 2018*

 - Designed a quadrotor system that can patrol autonomously on a university campus to address potential hazards on campus that are not easily monitored
 - Studied the quadrotor flight control system, analyzed some quadrotor flight control algorithms, and tried to improve the flight robustness of the quadrotor by combining fuzzy automation theory and discrete automation theory
 - Optimized a quadrotor autonomous navigation algorithm, by constructing a directed graph of the flight path during flight and searching for the shortest path, the flight path decision sequence is established by dynamic programming
 - Experimented with the quadrotor system, analyzed the problems that occurred during the patrol of the four-rotor, improved and further improved the function, and published a paper

- **Geometric Visualization Interaction System Based on Augmented Reality** Changchun, China
School of Mathematics, Jilin University *Mar.-Jul. 2017*

 - Designed a geometric visualization interaction System, which aims to quickly generate 3D geometric models by sketching in an augmented reality system to solve the boring problem in the geometric construction process
 - Built a sketch search system that converts two-dimensional data through a user’s sketch in three-dimensional space, and searches for a three-dimensional model with a spatial distance close to it and applies it to the AR device
 - Implemented the user’s ability to sketch in the air, capture the human bone data in the air through Leap Motion, and process and transmit the data to the AR device
 - Experimented with the system and improved its function, and finally published related paper

- **Family IoT Robot** Changchun, China
College of Computer Science and Technology, Jilin University *Mar.-Jul. 2017*

 - Designed a home multi-function robot system aims to capture and display home environment and data, remote-controlled robots for indoor monitoring, and improved home security
 - Established a robotic processing system jointly used by Arduino and Raspberry Pi, and combined the IoT three-tier architecture, published related paper, currently cited 9 times
 - Implemented the remote monitoring function of the robot, controls the robot movement through WiFi, and displays home data and video surveillance through HTTP protocol and TCP/IP protocol
 - Built a deep residual network in Raspberry Pi for face recognition, using OpenCv to find faces, and finding the target of the movement through background subtraction

FELLOWSHIP & HONORS

- **Honor for Academic:** Senior Member of China Computer Federation, NO.A3286M *Nov. 2018*
- **Scholarship for Academic Excellence:** China National Scholarship, China (1%) *Nov. 2015*
- **Scholarship for Academic Excellence:** The First Prize Scholarship for Graduate, Jilin University (3%) *Jun. 2017*
- **Scholarship for Outstanding Contribution:** Individual Scholarship for Graduate, Jilin University (5%) *Jun. 2017*
- **Scholarship for Outstanding Graduate:** Outstanding Student, Jilin University (10%) *Jun. 2017*
- **Honor for Outstanding Graduate:** Outstanding Graduates, Jilin University (3%) *May. 2017*
- **Scholarship for Academic Excellence:** The First Prize Scholarship, Jilin University (3%) *Oct. 2016*
- **Scholarship for Student Working:** Excellent Student Cadre, Jilin University (3%) *Oct. 2016*
- **Scholarship for Outstanding Contribution:** Individual Scholarship, Jilin University (5%) *Nov. 2016*
- **Award for Innovation:** Excellent Innovation Project for National Undergraduate, China (1%) *May. 2017*
- **Award for Innovation:** Innovation Project for National Undergraduate, China (5%) *May. 2016*
- **Award for Innovation:** Social Science Major Project for Jilin University Student, Jilin University (5%) *Mar. 2016*
- **Award for Competition:** Third Prize for National Mobile Internet Innovation Competition, China *Oct. 2017*
- **Award for Competition:** Third Prize for Entrepreneur Competition of Robot Contest, China *Jul. 2017*
- **Award for Competition:** Third Prize for National Undergraduate Computer Game Contest, China *Jul. 2017*
- **Award for Competition:** Third Prize for Smart Connected Innovation Competition, China *Jul. 2016*
- **Award for Competition:** Bronze Prize for “Internet+” Innovation and Entrepreneurship, Jilin Province *Jun. 2016*
- **Award for Competition:** Second Prize for “iCAN” Innovation and Entrepreneurship, Jilin Province *Sep. 2016*
- **Award for Competition:** Second Prize for Mathematical Contest in Modeling, Jilin Province *Aug. 2016*
- **Award for Competition:** Grand Prize for Jilin University Robot Contest, Jilin University *Jun. 2017*
- **Award for Competition:** First Prize for Undergraduate Electronic Design Contest, Jilin University *May. 2015*
- **Award for Competition:** Second Prize for Undergraduate Electronic Design Contest, Jilin University *Jun. 2015*
- **Award for Competition:** Silver Prize for “Internet+” Innovation and Entrepreneurship, Jilin University *Sep. 2015*
- **Honor for Activities:** Volunteer for China-Northeast Asia Expo, China *Sep. 2015*
- **Honor for Activities:** National Collegial Mini-marathon Pro-Bono Challenge Programme, China *Oct. 2015*
- **Honor for Activities:** President of the Student Association, Jilin University *Oct. 2015*

PRESENTATION

- **Innovation:** The 2nd China (Northeast) High-tech Industry and Financial Capital Matching Promotion Conference and Equity Investment Fund Forum. Changchun, China *Aug. 2017*
- **Innovation:** “Chuangxiang China” Changchun Station. Changchun, China *Sep. 2017*
- **Teaching:** 2018 Electronic Innovation Technology College Teachers Summit. Changchun, China *May. 2018*

TECHNICAL SKILLS

Programming Languages: C, C++, Java, Python, MATLAB, SQL, JavaScript, Html, PHP, LabVIEW, R, Perl, Go

Tools: OpenCV, Dlib, TensorFlow, PyTorch, Caffe, SPSS, Linux

Prototyping: Arduino, Raspberry Pi, STM32, FreeScale, 51

Fabrication: AutoCAD, CATIA, 3D Printing, Laser Cutting, CNC Milling