Xinyue Lan

No.2006 Xiyuan Avenue, West High-Tech Zone, 611731, Chengdu, China
xinyue_lan@163.com

Education Background

University of Electronic Science and Technology of China (UESTC) Chengdu, China

B.Eng. in Communication Engineering Overall GPA: 3.63/4.0 Major GPA: 3.69/4.0 Expected in July 2021

Joint Program in University of Glasgow

B.Eng. in Electrical Engineering

Overall GPA: 3.66/4.0 Major GPA: 3.72/4.0

- Selected Courses: Calculus, Linear Algebra, Probability and Statistics, Circuit Analysis and Design, Communication Principals and Systems, Stochastic Signal Analysis, Signals and Systems, Introduction to Programming

University of British Columbia Vancouver, Canada

Vancouver Summer Program, School of Architecture and Landscape Architecture July 2018 – Aug. 2018

- Courses: Design in the Public Realm (73%), Green System Planning (80%)

Research Experience

Department of Internet of Things Engineering, School of Information and Communication Engineering, UESTC

Research Assistant, Advisor: Prof. Bo Yan, Prof. Zhuoling Xiao

Visual SLAM in Dynamic Scenes July 2019 – Present

- Built a general framework for accurate tracking and map reconstruction in dynamic scenes.
- Embedded deep learning networks in visual Simultaneous Localization and Mapping (SLAM) methods for dynamic object detection and filtering.
- Outperformed the state-of-the-art visual SLAM system by 80% in tracking robustness in dynamic scenes.
- Ongoing: experimenting participation of deep learning in other parts of visual SLAM to improve the robustness of tracking and reconstruction.

Adaptive Zero Velocity Update Based on Neural Networks for Pedestrian Tracking May 2019 –July 2019

- Proposed an adaptive ZUPT algorithm with deep neural networks to predict Zero Velocity Update (ZUPT) moments in Inertial Measurement Unit (IMU) navigation.
- Built a comprehensive dataset in various indoor and outdoor scenes by collecting data with wearable IMU devices attached to up to 35 volunteers.
- Increased trajectory accuracy by 60% in the prototype implementation and finished the design on board in VHDL.
- Project paper accepted to IEEE GLOBECOM 2019.

Curvilinear Path Generation for UGV with Improved Ant Colony Algorithm Sept. 2018 – May 2019

- Proposed an algorithm to generate smooth global routes in known environments for navigation.
- Improved trajectory quality by introducing Initial Cost Policy (ICP) and Improved Ant Colony Optimization (IACO) with cubic spline parametrization.
- Verified the smoothness, consistency, and safety of the paths generated by our method in diverse simulated environments by eliminating sharp terms in baseline methods.
- Project paper accepted to ICIUS 2019.

Publications and Patent

Xinguo Yu, Ben Liu, **Xinyue Lan**, Zhuoling Xiao, Shuisheng Lin, Bo Yan, and Liang Zhou, "AZUPT: Adaptive Zero Velocity Update Based on Neural Networks for Pedestrian Tracking". *Conference paper, IEEE Global Communications Conference (IEEE GLOBECOM 2019), December, 2019*

Hub Ali, Dawei Gong, **Xinyue Lan,** and Anxu Li, "Curvilinear path generation for UGV with improved ant colony algorithm". *Conference paper, International Conference on Intelligent Unmanned Systems (ICIUS 2019), August, 2019*

Patent:

Zhuoling Xiao, Wang Liu, **Xinyue Lan,** and Zhiyong Guoi, “Monocular Visual Odometry Algorithm Based on Deep Learning and Attention Mechanism”. *CN201910839780.1 p Sept. 06, 2019*

Extracurricular Activities

74th United Nations General Assembly, China Youth Delegate - New York	Sept. 2019
Student Affair Centre of Glasgow College, Assistant	Oct. 2017 - Present
Graduation Ceremonies of Glasgow College, Volunteer	June. 2018
UESTC 2019 International Roundtable Symposium and Study Abroad Fair, Volunteer	Oct. 2019
UESTC Student Association Union, Secretary	Sept. 2018 – July. 2019

Skills

- Programming: C++, MATLAB, Robots Operating System (ROS), VHDL
- Languages: English (proficient), Chinese (native)

Honours and Awards

- James Watt Innovation Scholarship of Glasgow College (top 2%) Sept. 2019
- IELTS Scholarship of Glasgow College (top 10%) Mar. 2019
- Merit Student Scholarship of UESTC (top 10%) Sept. 2018
- Outstanding Student Leader Scholarship of UESTC (top 4%) Sept. 2018