RUIJIE XU (徐睿婕)

Tel: +852 4662 5464 | Email: ruijie.xu@connect.polyu.hk

The Hong Kong Polytechnic University, Hong Hom, Kowloon, Hong Kong

Research Interest: Seamless Positioning; Multi-sensor Fusion; Inertial Navigation.

Google Scholar, Linkedin, ORCID, GitHub

Education Background

- (Pursing) Ph.D. in Aeronautical and Aviation Engineering, The Hong Kong Polytechnic University, Hong Kong, China — 2023-present
- B.E. in Communication Engineering, Beijing, China — 2019-2023
- Visiting Student in Oxford Prospects and Global Development Institute, Oxford University, Oxford, UK — 2021

Publications

[1] **Xu R,** Chen S, Bai S, et al. Nonlinearity-aware ZUPT-aided Pedestrian Inertial Navigation based on Cubature Kalman Filter in Urban Canyons[J]. IEEE Transactions on Instrumentation and Measurement, 2024. (JCR Q1, IF=5.6)

[2] **Xu R**, Chen S, Sun W, et al. A SINS Error Correction Approach Based on Dual-Threshold ZV Detection and Cubature Kalman Filter[C]//2023 IEEE International Conference on Systems, Man, and Cybernetics (SMC). IEEE, 2023: 1585-1590.

[3] Chen S, **Xu R**, Sun W. An Edge Computing Architecture Based on Unikernel[C]//2022 Australian & New Zealand Control Conference (ANZCC). IEEE, 2022: 188-191.

[4] Luo J, Chen S, Lv Y, Yang F, **Xu R**. An IMU Error Correction Method Based on Multi-threshold ZV Detection and SRCKF[C]//2023 International Conference on Cyber-Physical Social Intelligence (ICCSI). IEEE, 2023: 622-627.

[5] **Xu R**, Ma F, Xin M, et al. A Task-Specific Remote Sensing Image Manipulation Based on Deep Detection Network and Mask Seam Carving[C]//2022 7th International Conference on Frontiers of Signal Processing (ICFSP). IEEE, 2022: 92-96.

Honors and Awards

- **Outstanding Graduates in Beijing** — **2023.06**
- 2022 Outstanding Volunteer of Chinese Association of Automation — 2023.01
- National Encouragement Scholarship — 2020.10, 2021.10, 2022,10
- 3rd Prize - The 9th "Da Tang Cup" National Student Mobile Communication 5G Technology Competition — 2022.05
- 25th place in North China - The 5th "Jing Shi IUV Cup" National University Student Modern Communication Network Deployment and Optimization Design Competition — 2021.12
- "Top Ten Merit Students", BUCT — 2021.04
- Outstanding Student Cadre, School of Information, BUCT — 2020.04

Research Experience

Multi-Source Fusion Positioning Technology for Operators in Railway Environments — **2022.05-2023.06**

RUIJIE XU (徐睿婕)

Tel: +852 4662 5464 | Email: ruijie.xu@connect.polyu.hk

The Hong Kong Polytechnic University, Hong Hom, Kowloon, Hong Kong

Research Interest: Seamless Positioning; Multi-sensor Fusion; Inertial Navigation.

Google Scholar, Linkedin, ORCID, GitHub

Institute of Automation, Chinese Academy of Sciences

Position: Research Assistant

- Plan to propose a combined positioning solution using inertial navigation technology based on satellite navigation and inertial navigation to achieve centimeter-level positioning for scenarios such as complex environments and severe star loss.
- Conducted algorithm research on adaptive zero velocity correction mechanism using accelerometer and gyroscope data in inertial navigation in scenarios with severe star loss to achieve centimeter-level positioning for a single soldier.
- Responsible for the literature review part of the thesis in the subject group.

NLP - News Comment Generation Based on Transformer and Knowledge Graph **2021.08-10**

Tsinghua University - Prof. Huang Yongfeng's Laboratory

Position: Research Assistant

- Modified the Graph Convolutional Neural Network (GCN) based algorithm into Graph Attention Networks (GAT) algorithm;
- Investigated Chinese knowledge graphs that can be used for news comment generation;
- Replicated several BERT and COPY mechanism-based paper codes using Linux server for comparative experiments of the paper.

NC State University Summer Online Data Science Program **Grade: 100.0 (A+)** **2021.07-08**

- Explored data processing in Python, sampling techniques, programming and scripting fundamentals. Used Python regression models and Tableau to develop predictive regressions in the 'Thinking about Purchasing Stock! Data Analytics and Making Decisions' project to show a more plausible trend at a lower value than the actual trend, with a 95% accuracy rate.

Programming Skills

- Verilog HDL
- Python
- C ++
- MATLAB