Pengkai Chen

My Resume

✉ Kevinlasnh@outlook.com │ 📞 +86 135-9049-3083 │ 📍 Earth │

🌐 https://github.com/kevinlasnh
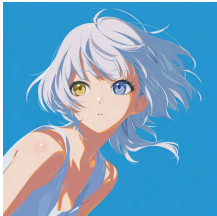
Education

Xi'an Jiaotong-Liverpool University	Bachelor's • GPA 3.9 / 4.0 (Top 5% in department)
Computer Science and Technology	Suzhou, China • Sep 2022 - Jun 2026

https://www.xjtlu.edu.cn/

Work Experience

Intellindust	Shenzhen, China
Software Engineer Intern	Jun 2023 - Jul 2023

- Learned and understood the complete workflow of deep learning algorithms
- Performed data annotation on target image datasets using LabelImg
- Maintained and managed the company's image database

https://www.intellindust.com/

Projects

Design and Fabrication of TENG Micro Triboelectric Vibration Sensor	Jun 2024 - Sep 2024
Project Type: An Undergraduate Summer Research Project	

Personal Role: Project Lead

- Led the design and fabrication of micro vibration sensors
- Improved the resonant layer cantilever structure to achieve 100 Hz low-frequency resonance detection
- Optimized triboelectric electrode through surface microstructure design and alumina nanoparticle doping
- Successfully enhanced sensor electrical output performance by 3x

AI-Powered Autonomous Golf Ball Collection Vehicle	Feb 2025 - Jun 2025
Project Type: Campus Industrial Practice Project	

Personal Role: Lead Algorithm Engineer & Lead Hardware Engineer

- Led overall project architecture design, analyzed and confirmed technical roadmap and requirements
- Designed the vehicle's mechanical structure, electrical system architecture, and deployment
- Responsible for system integration of structure, circuits, and algorithms
- Developed "dual controller board" architecture and core vehicle operation logic algorithm
- Integrated local YOLOv5 model to achieve autonomous ball collection functionalit

Multi-Sensor Fusion Autonomous Driving Small Vehicle System	Jun 2025 - Jun 2026
Campus Autonomous Vehicle Research Group	

Lead Algorithm Engineer (Ongoing)

- Optimizing the overall vehicle operation system architecture
- Tuning local path obstacle avoidance planning algorithms for autonomous vehicles
- Designed and implemented a four-layer system architecture (Driver, Perception, Navigation, Global Planning)
- Optimized FAST-LIO2 LiDAR-inertial odometry algorithm to achieve 50Hz high-frequency localization output
- Optimized PGO loop closure detection module with GTSAM graph optimization to eliminate long-term SLAM drift
- Researched LiDAR-IMU-GPS tight coupling fusion approach for enhanced long-distance navigation accuracy
- Tuned Nav2 costmap and path planning parameters to achieve centimeter-level autonomous obstacle avoidance

Awards

Second Prize in Social Practice Project	Dec 2022 - Apr 2023
Xi'an Jiaotong-Liverpool University	

University Scholarship	Sep 2022 - Jun 2023
Xi'an Jiaotong-Liverpool University	

University Scholarship	Sep 2023 - Jun 2024
Xi'an Jiaotong-Liverpool University	

Publications

Hybrid Algorithm Based on Comprehensive Learning Particle Swarm Optimisation with Local Search and Firefly Algorithm for UAV Path Planning	10 October 2024

Yongjin Wang; Pengkai Chen; Yifan Wu; Weixuan Chen; Lijing Tan
https://ieeexplore.ieee.org/document/10704243

Hybrid Algorithm Based on Comprehensive Learning Particle Swarm Optimisation with Local Search and Firefly Algorithm for UAV Path Planning	19 March 2025

Yongjin Wang; Pengkai Chen; Yifan Wu; Shuang Geng; Ben Niu
https://ieeexplore.ieee.org/document/10919273