刘诗聪

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介绍

　　刘诗聪，上海交通大学博士，工业移动机器人研发专家，原创研发了 MDCS 全栈机器人软件系统、CycleGUI 回合制 3D 用户界面框架等。目前主要从事人工智能技术在工业领域上的应用研究和开发，如视觉导航、机器人控制、机器人集群的调度和编程语言等，技术上驱动多家机器人产业企业。

　　博士期间主要研究方向为人工智能基础算法，包括计算机视觉、深度学习、大数据处理和自动编程等。目已发表学术论文 6 篇，发表在 T-MM、ICDM、ICME、IJCNN 等顶级国际期刊和会议上，并取得多项发明专利。于 2009 年通过 NOIP 信息学竞赛保送至上海交通大学，2013 年获得学士学位并直接攻读博士学位，2019 年 6 月获得博士学位。

　　当前研发开发主要围绕以下方面展开：视觉和激光的 SLAM（同时定位与建图）技术、视觉语义空间感知和导航、基于 AIGC 技术的智能体决策、工业领域的 AGI、和工业 AR/VR 引擎。

学历

- 2009-2013： 就读于上海交通大学，电子信息与电气工程学院计算机系，获学士学位。

- 2013-2019： 就读于上海交通大学，电子信息与电气工程学院计算机系，获博士学位。方向：视觉领域的深度学习应用和基于内容的大规模信息获取。论文题目：《大规模高维信息的结构编码学习与索引》

履历：

- *2016 年 9 月至今*:
  上海懒书智能科技有限公司，任总经理： 为多家客户研发基于地面纹理或激光或周向视觉的同时建图与导航技术（SLAM 算法）、开发 AGV 全套软件系统（MDCS 系统）、开发立体仓库控制系统、开发工业 3D 和 UI 引擎（CycleGUI）等。

- *2017 年 1 月至 2020 年 9 月*:
  上海数巢智能科技有限公司，任 CTO： 接受金山石化物流有限公司投资。研发机器人流程自动化(RPA)系统和软件工具，为客户提供信息系统整合服务。开发 WMS，OA，质量管理系统等软件系统。

- *2020 年 11 月至 2021 年 6 月*:
  华晓精密工业（苏州）有限公司、科大智能机器人技术有限公司，任 CTO： 导入

MDCS 全套 AGV 技术栈并展开工程落地工作。

- *2021 年 6 月至今*:
  法睿兰达科技（武汉）有限公司，任 CTO、法睿兰达技术（上海）有限公司，任总经理：导入 MDCS 全套 AGV 技术栈并展开工程落地工作。

论文和专利：

- Generalized Residual Vector Quantization and Aggregating Tree for Large Scale Search IEEE Transactions on Multimedia, 2017
- Quantizable Deep Representation Learning with Gradient Snapping Layer for Large Scale Search. International Conference on Multimedia and Expo, 2017
- Space Shuttle Model: A physics inspired method for learning quantizable deep representations. International Conference on Multimedia and Expo, 2017
- Generalized residual vector quantization for large scale data. IEEE International Conference on Multimedia and Expo (ICME), 2016
- Aggregating Tree for Searching in Billion Scale High Dimensional Data. IEEE 16th International Conference on Data Mining Workshops (ICDM), 2016
- Accelerated distance computation with encoding tree/forest for high dimensional data. International Conference on Machine Learning and Cybernetics (ICMLC), 2016
- CN201710264333.9 一种基于地面图像纹理的视觉导航方法
- CN201710244401.5 一种应用程序实现方法及装置
- CN201810174438.X 函数程序持久化的方法、电子设备及存储介质
- CN201810539970.7 一种 AGV 视觉轨道的铺设及优化方法
- CN201810539969.4 一种基于 AGV 小车的实时运行姿态的获取方法
- CN111415390A 一种基于地面纹理的定位导航方法及装置
- CN111191759A 一种二维码的生成方法和基于 GPU 的定位、解码方法
- CN202010918896.7 一种基于点云变换匹配的定位方法
- CN202011162835.9 一种基于多传感器耦合的移动设备的定位方法
- CN202111202799.9 一种移动机器设备的路径规划和管理系统和方法
- CN202310547441.2 一种滚翼装置及飞行器
- 另有多项软件著作权

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Introduction

Liu Shicong, Ph.D. from Shanghai Jiao Tong University, is an expert in the R&D of industrial mobile robots. He has innovatively developed the MDCS full-stack robot software system (including OS, perception, control and fleet management), CycleGUI turn-based 3D user interface framework, and more. Currently, his primary focus is on research and development of artificial intelligence technology applications in the industrial field, such as visual navigation, robot control, robot cluster scheduling, programming languages, etc. His expertise drives numerous robotics industry companies in China.

During his Ph.D. studies, his main research direction was foundational AI algorithms, including computer vision, deep learning, big data processing, and automatic programming. To date, he has published a number of academic papers in top international journals and conferences such as T-MM, ICDM, ICME, IJCNN, and has obtained several patents. He was recommended to Shanghai Jiao Tong University in 2009 through the NOIP Informatics Competition and obtained a bachelor's degree in 2013. He pursued a Ph.D. immediately after, and obtained the degree in June 2019.

His current R&D efforts primarily revolve around SLAM (Simultaneous Localization and Mapping) technology with vision and laser, vision-based semantic space perception and navigation, intelligent agent decision-making based on AIGC technology, industrial AGI, and industrial AR/VR engines.

Education

- 2009-2013： Shanghai Jiao Tong University, School of Electronic Information and Electrical Engineering, Computer Department. Obtained a Bachelor's degree.
- 2013-2019： Shanghai Jiao Tong University, School of Electronic Information and Electrical Engineering, Computer Department. Obtained a Ph.D. degree. Focus: Applications of deep learning in the vision field and content-based massive information acquisition. Thesis title: "Structured Encoding Learning and Indexing of Large-Scale High-Dimensional Information."

Experience

- *From September 2016 to Present*
  Founder of Lessokaji Co., Ltd. Developed SLAM algorithm based on ground

texture or laser or panoramic vision for multiple clients. Developed the complete AGV software system (MDCS system), the 3D warehouse control system, and the industrial 3D and UI engine (CycleGUI).

- *January 2017 to September 2020*
  CTO at Shanghai Shuchao Intelligent Technology Co., Ltd. Accepted investment from Jinshan Petrochemical Logistics Co., Ltd. Developed Robot Process Automation (RPA) systems and software tools, provided information system integration services to clients, and developed software systems like WMS, OA, Quality Management System, etc.。
- *November 2020 to June 2021*
  CTO at Huaxiao Robotics/CSG Group. Introduced and implemented the full suite of MDCS AGV technology.
- *From June 2021 to Present*
  CTO/Cofounder at Fairyland Technology. Implemented the full suite of MDCS AGV technology and spearheaded engineering projects.

Papers and patents：

- Generalized Residual Vector Quantization and Aggregating Tree for Large Scale Search IEEE Transactions on Multimedia, 2017
- Quantizable Deep Representation Learning with Gradient Snapping Layer for Large Scale Search. International Conference on Multimedia and Expo, 2017
- Space Shuttle Model: A physics inspired method for learning quantizable deep representations. International Conference on Multimedia and Expo, 2017
- Generalized residual vector quantization for large scale data. IEEE International Conference on Multimedia and Expo (ICME), 2016
- Aggregating Tree for Searching in Billion Scale High Dimensional Data. IEEE 16th International Conference on Data Mining Workshops (ICDM), 2016
- Accelerated distance computation with encoding tree/forest for high dimensional data. International Conference on Machine Learning and Cybernetics (ICMLC), 2016
- CN201710264333.9 - A visual navigation method based on ground image texture.
- CN201710244401.5 - A method and device for implementing applications.
- CN201810174438.X - A method for function program persistence, electronic device, and storage medium.
- CN201810539970.7 - A method for laying and optimizing AGV visual tracks.
- CN201810539969.4 - A method for acquiring real-time operating posture based on an AGV cart.
- CN111415390A - A location navigation method and device based on ground texture.
- CN111191759A - A method for generating fiducial marker and a GPU-based location and decoding method.
- CN202010918896.7 - A positioning method based on point cloud transformation matching.

- CN202011162835.9 - A positioning method for mobile devices based on multi-sensor coupling.
- CN202111202799.9 - A route planning and management system and method for mobile machinery equipment.
- CN202310547441.2 - A rolling-wing device and aircraft.
- *Additionally - Holds multiple software copyrights.*