Yongce Liu

Shenyang, Liaoning, China

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Education

Northeastern University *Shenyang, Liaoning, China*

Bachelor of Engineering in Automation (Experimental Class) *Sep 2020 - Jun 2024 (Expected)*

- **GPA: 4.3193/5, Ranking: 2/191, Average Score: 93.193**
- **Courses:** Advanced Mathematics I, II (97, 95), Linear Algebra (94), Probability Theory and Mathematical Statistics (96), Circuit Principle (97), Analog Electronic Technology (98), Digital Signal Processing (97), Automatic Control Principle (97), Computer Control System (95)

Publications

Online Trajectory Optimization for UAV-Assisted Hybrid FSO/RF Network With QoS-Guarantee

Yong-Ce Liu, Zi-Yang Wu, Peng-Cheng Song

IEEE Communications Letters 27.5 (2023) pp. 1357–1361. 2023

Research Projects

Research on UAV Cooperative Platform Driven by Air-based Laser network *Shenyang, Liaoning*

National Training Program of Innovation and Entrepreneurship for Undergraduates, **Leader** *Dec 2021 - Mar 2023*

- Applying the realistic mobility model to build a base user mobility environment.
- Applying the deep reinforcement learning (DRL) algorithm for the UAV trajectory optimization.
- The project was rated at the national level and ended with a journal paper (JCR Q2) and a granted utility model patent.

Sunflower, A Wireless Charging Base Station for Shared Electric Bicycles *Shenyang, Liaoning*

China TRIZ Cup Student Innovation Method Competition, **The key member** *Jan 2022 - Dec 2022*

- The wireless coils can be redirected to optimize electricity supply efficiency.
- By optimizing the rotation angle of the solar panel driven by air pressure, the electricity generation efficiency is improved.

The learning of Zero-Shot Industrial Fault Diagnosis

Data Analysis and Data Mining Course *Sep 2022 - Dec 2022*

- After reading relevant literature in the field of zero-shot learning and industrial fault diagnosis, I replicated the experiments in the related papers and applied the zero-shot fault diagnosis algorithm to a new fault dataset with a satisfactory fault diagnosis result.

Patents

A free-space optical communication modulator

Utility Model Patent (Granted), 1st Inventor *Oct 2022*

- By improving the physical structure, the problem that the wire and the interface are easy to fall off is solved.

Electromagnetic detection devices and detection methods

Utility Model Patent (Granted) & Invention patent (Under examination), Ranking 7 *Jan 2023*

- The device detects the presence of damage to the wire and locates the location of the damage.

Honors and awards

National Scholarship (2.5%) 2021, 2022

1st Class Scholarship at Northeastern University 2021, 2022

Shenyang Outstanding University Student (0.5%) 2021

Outstanding Student Pioneer at Northeastern University (1%) 2021, 2022

Outstanding Student in the College of Information Science and Engineering at Northeastern University 2022, 2023

National Training Program of Innovation for Undergraduates, Good Conclusion 2023

Mathematical Contest In Modeling(MCM), Meritorious Winner 2022

China Computer Gaming Competition (Game Theory), 1st Prize 2021, 2022

China TRIZ Cup Student Innovation Method Competition, 3rd Prize 2022

Skills

Programming Python (Pandas, PyTorch, NumPy, Scikit-learn. etc.), Matlab, C, RL/DRL Algorithms (Q-Learning, DDPG, PPO).

Miscellaneous Embedded Development (C51, Jetsfon TX2. etc.), LaTeX, Linux, Microsoft Office, Git.

Soft Skills Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

刘永策

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教育经历

东北大学 985 211 双一流 2020年09月 - 2024年06月

自动化(实验班) 本科 信息科学与工程学院 沈阳

GPA: 4.3193/5, Rank: 2/191, 均分: 93.193

课程：高等数学Ⅰ，Ⅱ（97 95）、线性代数（94）、概率论与数理统计（96）、电路原理（97）、自动控制原理（97）

研究经历

空基激光网络驱动下的无人机协作平台研究 2021年12月 - 2023年03月

国家大学生创新创业训练项目 国家级 负责人

- 应用移动模型建立基础的用户移动环境
- 应用深度强化学习算法进行无人机轨迹优化
- 该项目被评为国家级项目，并以一篇期刊论文（JCR Q2）和一项获准的实用新型专利结项。

“向日葵”共享电单车无线充电基站 2022年01月 - 2022年12月

中国TRIZ杯大学生创新方法大赛 国家级三等奖 核心成员

- 无线充电线圈可以被重新定向，以优化充电效率。
- 通过优化由气压驱动的太阳能板的旋转角度，提高了发电效率。

零样本工业故障诊断的学习 2022年09月 - 2022年12月

数据分析与数据挖掘课程学习

- 阅读了零样本学习和工业故障诊断领域的相关文献。并复现了相关论文中的实验，并将零样本故障诊断算法应用于新的故障数据集中，最终取得了满意的故障诊断效果。

研究成果

学术出版

Online Trajectory Optimization for UAV-assisted Hybrid FSO/RF Network with QoS-Guarantee

Yongce Liu, Ziyang Wu, Pengcheng Song

IEEE Communications Letters 2023

专利申请

一种自由空间光通信调制器，实用新型专利（已授权） **第一发明人**

- 通过改进相关的物理结构，解决了线材和接口容易脱落的问题。

电磁检测装置和检测方法，实用新型专利（已授权）& 发明专利（审查中） 排名 7

- 该设备和方法能检测到电线是否有损坏，并定位损坏的位置。

荣誉奖项

国家奖学金(2.5%) 2021, 2022

东北大学一等奖学金 2021, 2022

沈阳市优秀大学生(0.5%) 2021

东北大学优秀学生（标兵）(1%) 2021,2022

东北大学信息科学与工程学院卓越学人 2022, 2023

国家级大学生创新创业训练计划结题良好 2023

美国大学生数学建模竞赛(MCM)，国际一等奖 2022

中国大学生计算机博弈大赛，国家一等奖 2021, 2022

中国TRIZ杯大学生创新方法大赛，国家三等奖 2022

专业技能

编程：Python (Pandas, PyTorch, NumPy, Scikit-learn等), Matlab, C, RL/DRL算法 (Q-Learning, DDPG, PPO等)

其他：嵌入式开发(C51, STM32, Jetson TX2等), LATEX, Linux, Microsoft Office, Git

英语：CET-4 (537), CET-6 (537)