Yicheng Chen

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Homepage
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Education Background

- **B.Eng.** Automation Science and Electrical Engineering, Beihang University, China 2017.09- Present
- **GPA 3.74 / 4**

Technical Ability

- Standard Test: IELTS 7.5, CET-6 594
- Languages: MATLAB, Python, C/C++, Verilog, Assembly
- Skills&Tools: Simulink, Proteus, OpenCV, Tensorflow, FPGA, Arduino, Solidworks, AutoCAD, LaTeX.

Research Experience

- **Multi-UAV Mobile Edge Computing and Path Planning Platform based on Reinforcement Learning**

Second author, supervised by Prof. Baochang Zhang.

Paper under review at *IEEE Transactions on Emerging Topics in Computational Intelligence*.

arXiv link: https://arxiv.org/abs/2102.02078

We introduce a new multi-UAV Mobile Edge Computing platform, which aims to provide better Quality-of-Service and path planning based on reinforcement learning. The contributions of our work include: 1) optimizing the quality of service for mobile edge computing and path planning in the same reinforcement learning framework; 2) using a sigmoid-like function to depict the terminal users' demand to ensure a higher quality of service; 3) applying synthetic considerations of the terminal users' demand, risk and geometric distance in reinforcement learning reward matrix to ensure the quality of service, risk avoidance, and the cost-savings.

Did some of the coding and paper writing work.

- **Bolted Assembly Optimization in the 35th ECMI Modelling Week** 2020.08

Took part in the 35th ECMI Modelling Week, worked with 4 M.Sc. students, and gave an oral report. Proposed an algorithm for determining the installation sequence of bolts in aircraft assembly for achieving a relatively good tension distribution.

- **An Algorithm for Diagnosing COVID-19 Based on Neural Network** 2020.05-2020.06

Based on transfer learning and ensemble learning, a neural network is built, which can classify chest radiography into 3 classes (COVID, NORMAL and Viral Pneumonia) with accuracy of more than 0.98.

- **Research on Non-contact Heart Rate Monitoring Based on Computer Vision** 2018.04-2019.10

First author, led a team of 4 undergraduates, supervised by Prof. Honglun Wang.

This project is supported by National College Students' Innovation and Entrepreneurial Funding. Based on OpenCV, successfully developed a program which can measure heart rate only through a common camera. Managed the team, organized the algorithm and wrote the codes for the entire project.

- **Real-time Perception Robot Based on Multi-sensor** 2018.10-2018.12

One of team leaders.

Designed and built a robot with Arduino which has the following functions: line tracking, autonomous obstacle avoidance, objects grabbing with robotic arm and Bluetooth remote control. This project entered top 4 in the 6th Robot Competition in Beihang University.

Wrote the path planning algorithm, designed the robotic arm and wrote the corresponding control code.

Activities

- **Summer school in Technical University of Denmark** 2019.08-2019.09

Studied in the Department of Applied Mathematics and Computer Science, finished courses of 5 ECTS credits.

- **Vice President of Student Association of Science and Technology at BUAA** 2018.09-2019.09

Led an association with more than 100 members and successfully organized more than 10 scientific activities.

- **Volunteer activity for Education Support in North Sichuan, China** 2018.07-2018.09

Aimed at promoting quality education in less developed areas, participated in this program with 40+ students. Our achievements were awarded the National Bronze Award for College Student Volunteer Activity.

Honors & Awards

- **Merit Student** in Beihang University (2017-2018, 2018-2019, 2019-2020).
- **6 Scholarships** in Beihang University:

Scholarship for excellence in social work	special class × 1, first class × 1, second class × 1
Scholarship for excellence in academic achievements	second class × 1
Scholarship for excellence in competition	second class × 1
Scholarship for excellence in student activities	second class × 1

- **National Bronze Award** for College Student Volunteer Activity in China.
- **Top 4** in 6th Robot Competition in Beihang University.
- **Second Prize** in 4th Engineering Design Competition in Beihang University.
- **Third Prize** in 28th 'Feng Ru Cup' Creative Competition in Beihang University.
- **Third Prize** in Mathematical Contest in Modeling in Beihang University (2019&2020).

陈奕丞

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Kaggle: www.kaggle.com/yichengchen2020

教育背景

- **本科在读** 自动化，自动化科学与电气工程学院，北京航空航天大学 2017.09-
- **GPA 3.74 / 4**

技能

- **英语水平**：雅思 7.5，六级 594
- **编程语言**：MATLAB, Python, C/C++, Verilog, Assembly.
- **技能与工具**：Simulink, Proteus, OpenCV, Tensorflow, FPGA, Arduino, Solidworks, AutoCAD, LaTeX.

研究经历

- **Multi-UAV Mobile Edge Computing and Path Planning Platform based on Reinforcement Learning**

第二作者，指导教师：张宝昌

论文在审于 *IEEE Transactions on Emerging Topics in Computational Intelligence*

arXiv: https://arxiv.org/abs/2102.02078

提出了一个新的多无人机移动边缘计算平台，该平台旨在基于强化学习来提供更好的服务质量和路径规划，主要工作包括：1）在强化学习框架中优化了移动边缘计算和路径规划服务的质量； 2）使用 Sigmoid 函数映射终端用户的需求，以确保更高的服务质量； 3）在强化学习奖励矩阵中综合考虑终端用户的需求、风险和几何距离，以确保服务质量，规避风险并节省成本。

个人贡献：一部分代码编写与论文撰写工作。

- 螺栓装配顺序优化算法-35th ECMI Modelling Week 2020.08

参加了 35th ECMI Modelling Week, 与欧洲地区的 4 名研究生合作，提出了一种确定飞机机翼装配中螺栓安装顺序的算法，以实现相对较好的应力与间隙分布，并作口头报告。

- 基于神经网络的新冠肺炎诊断算法 2020.05-2020.06

基于迁移学习与集成学习，设计了一个神经网络分类器，可以对胸部 X 光片做出诊断，判断其属于新冠肺炎、一般病毒性肺炎或正常，准确率大于 0.98。

- 运动状态下基于视觉的非接触式心率监测技术研究 2018.04-2019.10

立项人&第一完成人，指导教师：王宏伦

该项目受国家级大创经费支持，团队成员共四人，设计了基于视觉的心率测量算法，仅需要一个普通摄像头即可实现无接触心率测量。

个人贡献：作为第一完成人，完成了软件框架设计与代码编写工作。

- 多传感器的智能小车设计 2018.10-2018.12

基于 Arduino 设计了一个智能小车，功能包括：巡线，自动避障，机械臂抓取，蓝牙遥控。这个项目参加了北航第四届机器人竞赛并进入四强。

个人贡献：编写了巡线代码，完成了机械臂设计和相应的控制代码。

实践与活动

- **第 16 届挑战杯赛事志愿者** 2019.11
- **丹麦工业大学暑期交流** 2019.08-2019.09

作为访问学生，在丹麦工业大学应用数学与计算机科学系进行了为期一个月的学习，获 5ECTS 学分。

- **北航大学生科学技术协会副主席** 2018.09-2019.09

领导一个超过 100 人的学生组织，成功组织过多场校内科技科普活动。

- **中国大学生农村支教项目全国铜奖** 2018.07-2018.09

与 40 余名志愿者一同在四川省洛水镇支教，获评 2018 年中国大学生农村支教奖全国铜奖。

荣誉与奖项

- 北航校级三好学生(2017-2018, 2018-2019, 2019-2020)，优秀团员(2017-2018)
- 六项北航校级奖学金：

社会工作奖学金	特等奖一次，一等奖一次，二等奖一次
学习优秀奖学金	二等奖一次
学科竞赛奖学金	二等奖一次
社会实践奖学金	二等奖一次

- 中国大学生农村支教奖全国铜奖(2018)
- 北航优秀实践队二等奖(2018)
- 北航第四届工程设计表达竞赛二等奖
- 北航第 28 届“冯如杯”创意竞赛三等奖
- 北航第 29 届“冯如杯”科技竞赛院二等奖
- 北航数学建模竞赛三等奖(2019, 2020)
- 北航机器人竞赛四强