YANRAN WANG

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EDUCATION

Imperial College London *January 2021-Now*
Status: A first year Ph.D. Student.
Research Interests: Unmanned Aerial Vehicle, Autonomous Navigation, Reinforcement Learning.

Shanghai Jiao Tong University (SJTU, 211 and 985) *September 2017-March 2020*
Degree: Master of Engineering
Major: Aeronautical and Astronautical Science and Technology----Information and Control
Comprehensive Ranking: 1/71
Core Courses: Numerical Estimation, Optimal Estimation and Information fusion, Optimal Control Principle and Application, Matrix Theory.
Research Interests: Machine Learning, Muti-Sensor Fusion.

Southeast University (SEU, 211 and 985) *September 2013-June 2017*
Degree: Bachelor of Engineering Overall GPA: 3.84/5.0
Major: Automation, School of Automation
Comprehensive Ranking: 3/144
Core Courses (Full score is 100 points): Probability Theory and Mathematical Statistics (94), Electronic Circuit Foundation (95), Computer Composition and Structure (92), Communication Principle (97).
Research Interests: Automatic Control, Machine Learning.

HONOURS AND AWARDS

- Shanghai excellent graduate honour *2019*

Awarded for outstanding comprehensive evaluation including scientific research and course grade (ranking 2/71).

- National Scholarship *2018*

Awarded for outstanding comprehensive evaluation for the first year of master study (ranking 1/71).

- SJTU Graduate First-class Academic Scholarship *2017*

Awarded for outstanding course grade. The top 30 percent of students can get this scholarship in SJTU.

- Exam-exempted postgraduate student recommended to SJTU *2017*

In China, outstanding undergraduate students can study for a master degree directly and I got this qualification (ranking 3/144).

- The last eight teams of RoboCup of World (In Leipzig, Germany) *2016*

RoboCup is a professional robot competition in the world and my work is described in RESEARCH EXPERIENCES.

- The first prize of Mathematical Contest in Modeling (MCM) *2015*

Awarded for theoretical model design, programming implementation and result analysis. MCM is the largest basic discipline competition in China.

- Presidential Scholarship *2015*

Awarded for outstanding course grade and competition results for my postgraduate study in SEU.

RESEARCH EXPERIENCES

- **Perception-to-decision Reinforced Imitation: An Intelligent Flight Control System**

  Source: Shanghai Industrial Strengthening Project *January 2017-December 2019*

  My work was to build an Intelligent Flight Control System (IFCS) for autopilot. The underlying IFCS combines the Convolution Neural Network, Deep Reinforcement Learning and Imitation Learning processes. The developed approach is proved to be more efficient and robust for the complicated flight situation than the existing autopilot system.

- **Theoretical Model Design and Safety Analysis for Muti-Sensor Fusion System**

Source: National Program on Key Basic Research Project *September 2013-August 2018*

(1) A fusion model was established with a variable sampling Variational Bayesian-Interacting Multiple Model algorithm for integrated display in a cockpit simulator platform. My work was responsible for the overall implementation of the fusion system including theoretical model design, experimental simulation verification, engineering implementation and results analysis.

(2) I have proposed a new model of multi-source Mishap Dilution, Mishap Implication and Mishap Confusion (MD-MI-MC) safety analysis of integrated avionics system. A set of theory system and evaluation standards were built based on the presented MD-MI-MC theory and mechanism of integrated avionics.

- **A Robot Self-Localization System Based on Computer Vision**

  Source: Robot World Cup (RoboCup) *October 2014-October 2016*

  Robocup is a professional robot competition with a large influence, a high level of comprehensive technology and a wide range participation across the world. My main work was to develop a robot vision self-localization system using computer vision.

PUBLICATIONS

1. **Yanran Wang**, Gang Xiao, and Zhouyun Dai. "Integrated Display and Simulation for Automatic Dependent Surveillance–Broadcast and Traffic Collision Avoidance System Data Fusion." Sensors 17.11 (2017): 2611. (DOI: 10.3390/s17112611)
2. Xiao, Gang, **Yanran Wang**, and Fang He. "Research on safety modeling and analysis in information fusion system." Aerospace Systems 2.1 (2019): 51-60. (DOI: 10.1007/s42401-018-0011-2, recommended by an A-class International Conference in SJTU)

INTERNSHIP

- **Internship in Ant Financial Services Group (Alipay)**

  Machine Learning Algorithm Intern *June 2019-September 2019*

  A Deep Neural Network and Deep Reinforcement Learning model was built for a recommender system which is used to estimate Internet user's Click-Through-Rate.

- **Intel Asia Pacific R&D Center**

  Deep Learning Software Intern *March 2019-May 2019*

  Responsible for machine learning framework (BigDL) development and test preprocessing.

EXTRACURRICULAR ACTIVITIES

Teaching Assistant of Academic Writing, Norms and Ethics *2018*

Volunteers of Minhang District Youth Activity Center, Shanghai *2018*

The 4th College Student Art Exhibition won the provincial special prize *2014*

SKILLS

Programming languages: C/C++, Python and Matlab

Others: Erhu (a Chinese national musical instrument)