YANRAN WANG

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EDUCATION

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): College Physics (96), Probability Theory and Mathematical Statistics (94), Electronic Circuit Foundation (95), Computer Composition and Structure (92), Communication Principle (97).

Shanghai Jiao Tong University (SJTU,C9,211 and 985) *September 2017-March 2020*
Degree: Master of Engineering
Major: Information and Control, School of aeronautics and astronautics

HONORS AND AWARDS

Presidential Fellowship of Southeast University *2015*
The first prize of Mathematical Contest in Modeling(MCM) *2015*
The first prize of RoboCup of China (In Guiyang and Hefei, China) *2015 and 2016*
The last eight teams of RoboCup of World (In Leipzig, German) *2016*
Exam-exempted postgraduate student recommended to Shanghai Jiao Tong University (SJTU) *2017*
Shanghai Jiaotong University Graduate First-class Academic Scholarship *2017*
National Scholarship for graduate student of Shanghai Jiao Tong University *2018*

ACADEMIC EXPERIENCES

- **Project: Shanghai Industrial Strengthening Project (GYQJ-2017-5-08)**
  ShangHai Jiao Tong University (SJTU) *January 2017-December 2019*
  The current automatic flight control system cannot operate all flight situation especially in uncertainties or emergency situations. An Intelligent Flight Control System (IFCS) is presented for autopilot in an emergent flight environment. The underlying IFCS, which uses end-to-end neural networks, combines the Convolution Neural Network and Deep Deterministic Policy Gradients. The imitation learning process, which uses the processed flight information as input and pilot command as output, is added in early training to meet the requirements of avionics system such as aircraft dynamic model and flight control model. Our results show that the trained IFCS is more efficient for the same complex mission comparing to human pilots. And for the new flight scenarios, our approach is proved to be more robust to complicated flight situation.
- **Project: National Program on Key Basic Research Project (2014CB744903)**
  Shanghai Jiao Tong University (SJTU) *September 2013-August 2018*

(1)I established a fusion model of two sensors with a variable sampling Variational Bayesian-Interacting Multiple Model algorithm for integrated display in a simulator platform. The overall implementation of the fusion system is done, including theoretical model design, experimental simulation verification, engineering implementation, results analysis. Simulation and implementation results show that the fused system has better performance than each independent subsystem and it can work well in engineering applications.

(2)System integration can improve task effectiveness, function efficiency and resources utilization of system. The concept and model of multi-source Mishap Dilution, Mishap Implication and Mishap Confusion (MD-MI-MC) is proposed for safety analysis of integrated avionics system. A set of theories system and evaluation standards are built based on the presented MD-MI-MC theory and mechanism of integrated avionics.

- **Project: Self localization of Robot project**

  Southeast University (SEU), *October 2014-October 2016*

  My main part is the robot vision self-localization based on computer vision and also participates in the gait design modeling of some robots. The robot self- localization mainly to identify door posts and edge lines.Then Monte-Carlo particle filter algorithm is used for robot to do localization. The design and debugging of gait is mainly based on the human body model of the humanoid robot proposed by Putian Xiu Shi (Japan). The design of the robot has been completed in the early stage.

PUBLICATIONS

1. Yanran Wang, Gang Xiao, Zhouyun Dai. Integrated Display and Simulation for ADS-B and TCAS data fusion [J]. Sensors, 2017. 17(11), 2611. (Published)
2. Gang Xiao, Yanran Wang, Fang He. Research on safety modeling and analysis in information fusion system[J]. Aerospace Systems, 2018: 1-10. (Published)
3. Yanran Wang, Gang Xiao. Perception-to-decision Reinforced Imitation: An Intelligent Flight Control System for Undesired Flight Emergencies[C]. 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems. (Submitted)

INTERNSHIP

1. In 2019, as a Deep Learning Software Engineer intern at Intel Asia Pacific R&D Center.

EXTRACURRICULAR ACTIVITIES

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

TA of Academic Writing, Norms and Ethics *2018*

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

SKILLS

Programming languages: C, C++, Python, Matlab.

Others: Erhu (a Chinese national musical instrument)