Qiang Guo

gq@nuaa.edu.cn | +86 18795883968 |Rm 1801 Unit 4, Chengqu West Garden (Huayuan), Datong City,Shanxi province, China
Linkedin: https://www.linkedin.com/in/charles-david（guo-qiang）-420821104

EDUCATION

Nanjing University of Aeronautics and Astronautics Nanjing, China
B.E., Flight Vehicle Propulsion Engineering Sept 2014-Jun 2018(Expected)

- Related courses: Complex Functions and Integral Transformation, Analog & Digital Electronics Technology, C Programming Language, Mechanics Of Material, Thermodynamics, Computer Simulation, Computer control
- Awards: Scholarship for Outstanding Students, third Prize, 2015&2016
- Overall GPA: 3.6/5.0（86/100） Major GPA: 3.5/5.0（85/100）

National Tsing Hua University Hsinchu, Taiwan
Exchange student, Power Mechanical Engineering Sept 2016-Jan 2017

- Related courses: Control System, Fluid Mechanics, Scientific Computing, Kinematics of Machinery

INTERNSHIP

China National South Aviation Industry Co. Ltd (SAIC) Zhuzhou, China
Co-op Engineer July 2017

- Observed production and assembly process in the workshop of aero engines and components
- Measured some of the physical criteria for the parts in the blade processing workshop

RESEARCH EXPERIENCE

Gas Path Fault Diagnosis for Aero Engine based on FKPCA_HMM Nanjing, China
Institute of Control Engineering July 2016-Aug 2016
Research Assistant, Supervisor: Professor Feng Lu

- Investigated and mastered NPSS(Numerical Propulsion System Simulation)system
- Implemented classification tool FKPCA-HMM with Matlab
- Processed data from NASA using Hidden Markov Model, Viterbi algorithm and FKPCA algorithm, increased classification accuracy from 80% to 96%, reduced computational time-consuming and dimension to satisfy real-time requirements
- Verified the method as a reliable tool to the gas path fault diagnosis

Nonlinear Regression Analysis of the Influencing Factor about Chinese Film in the North American Box Office (Mathematical Contest in Modeling) Nanjing, China
Team Leader May 2016-Feb 2016

- Collected movie box office data and other influencing factor data such as rating, release date and so on
- Established a linear gradual regression model with the influencing factors using Matlab
- Conducted significance test and fit test
- Passed Student's T test and achieved Significant level at 95%

COURSE PROJECTS

Research on Design Technology of Transition State Control Law of UAV with Thrust Vector Nanjing, China
Developer Jan 2017-Jun 2018

- Established the coordinate system and transform matrix and obtained the kinemics and dynamics equation
- Proposed the control strategy algorithm for the transition state of the 3-rotor tilt drone
- Tested the transition algorithm by using the ardupilot framework software platform and the self-made tilt-rotor UAV, which could be finished in 5 seconds with little disturbed

Control System: Motor Implementation with PID Control Hsinchu, Taiwan
Developer Sept 2016-Jan 2017

- Built a small motor that can be driven by a 1.5 volts voltage based on electromagnetic induction principle
- Transformed speed signal into voltage signal to realize feedback control and adjust the motor speed
- Achieved high speed rotation under low voltage after many times shape improvements

Computer Control: Car Self-balancing Implementation with Arduino Nanjing, China
Developer June 2017

- Implemented port signal acquisition of encoder using discrete signal processing
- Programmed a control system to achieve the car's dynamic balance control with C using data fusion algorithm, filter algorithm, and digital PID algorithm in Arduino
- Improved control system and adjusted PID parameters to realize car self-balancing when being disturbed

Computer simulation: Single Service Desk Queuing System Simulation Nanjing, China
Developer Jun 2016

- Designed Random Number Generator with Multiplication Method and Random Variable generator with Transform Sampling Method
- Modeled service desk operation, assuming the arrival and acceptance of service to be subjected to Poisson distribution
- Programmed the discrete event system simulation in C
- Outputted a series of data such as average retention time, service efficiency, retention probability and other statistical

indicators

SKILLS

- **Programming languages:** C/C++, Matlab/Simulink, Python,Java, Latex, Arduino, HTML
- **Tool:** AutoCAD, Proe, Matlab, NPSS