

Donglai FAN

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EDUCATION

School of Qiushi Honors College, Tianjin University Major in Electrical Engineering Sept. 2018 - Jun. 2022

Top 2 among 192 students Score: 94.4/100 GPA: 3.94/4.0

- **Major courses:** 4.0/4.0 for all electrical courses, Electrical Engineering B (100), Principle of Single Chip Microcomputer (99), Automatic Control Theory (98), Signal and System (97), Principles of Microcomputer (97), Digital Electronic Technology (97), Fundamentals of Power System (96), Power Electronics Technology (96), Electrical Engineering A (96), Circuit Fundamentals (95), etc.
- **Dual degree courses:** Economics, Engineering Economics, Project Management, Operations Research, Accounting, Foundations of International Engineering Law, etc.
- **Personal skills:** 607 points in English CET-6, with reading and writing ability of English literature
A solid foundation in mathematics, with a score of 90+ for all mathematics classes, mathematical equations (100), advanced mathematics B (98), probability theory and mathematical statistics (98), numerical calculation methods (98)
Master programming languages such as C++, Python (excellent in National Computer Rank Examination), and be able to use Matlab, PyCharm, Keil, Proteus, LabVIEW, etc.

AWARDS

- Nominated for outstanding student model of Tianjin University (the highest scholarship honor for Tianjin University students, 15 undergraduates, masters and PhD each year)
- National Scholarship for two consecutive years (the first place in the comprehensive evaluation, top 0.2%)
- The first place in the top ten outstanding youth competition of Qiushi Honors College (the youngest participant)
- 22 school-level and above honors including Outstanding Student Honor (2%), Science and Technology Excellence Honor, Merit Student Honor, Outstanding Student Leader Honor, etc.
- The first prize of Tianjin Mathematics Competition, the third prize of National College Student Mathematics Competition
- The first prize of Tianjin University Challenge Cup, the first prize of TJUPT, Tianjin University Physics Academic Competition, the second prize of "The Next Thirty Years" Innovation Competition

RESEARCH EXPERIENCES

Online Regulation Technology and Device of Park Integrated Energy System based on Adaptive Lifelong Learning

Apr.2020 - Now

- Joined the research group of Professor Mu Yunfei of Tianjin University, conducted literature research on integrated energy systems, based on the concept of energy hubs, established a combined cooling, heating and power system (CCHP) mechanism-data hybrid drive model, and realized full-condition simulation of the gas turbine distributed CCHP
- Determined the steady-state operating boundary of the existing CCHP mechanism model through Simulink, and realized the performance research and mechanism analysis of CCHP under full working conditions
- Used deep learning algorithms to establish the relationship between input gas volume, outlet temperature, etc. and load power, and built a CCHP digital model

Design of Wireless Motion Sensor based on STM32

Jun.2020 - Now

- Joined Professor Tang Chen's laboratory of Tianjin University, based on ADS1292 chip, MPU-6050 chip and other modules to realize the measurement of heart rate, steps, body temperature and other sports indicators, and realized the synchronization of each module through STM32 MCU interrupt processing method

- Based on the digital signal collected by AD conversion of STM32, used Matlab to fit the digital signal-measured value function curve and obtained the expression, transmitted the measurement data through the ESP8266wifi module, and finally displayed the measurement results through LCD1602.

SCIENCE AND TECHNOLOGY COMPETITION

Research on the Intelligent Health Detection System for the Elderly Based on Computer Vision

Feb.2020 – Jun.2020

- Won the first prize in the "Challenge Cup" extracurricular academic science and technology competition of Tianjin University, focused on the aging of the population and the hot social issues of the elderly living at home, as the team leader, participated in the project defense on behalf of the team, and received unanimous praise from the judges and teachers
- Realized the human expression and posture recognition module, transmitted various index data to the terminal server, judged and classified the human health status through the neural network and made predictions, transmitted the data results to the mobile APP to realize real-time feedback of the health status of the elderly at home

Magnetic Levitation

Oct.2019 – Jan.2020

- The first prize of the Tianjin University Physics Tournament, as the team leader, designed experiment and realized the theoretical explanation of the experimental phenomenon by consulting the literature
- Quantified the dynamic balance analysis of the magnetic stirrer in the fluid, and explored the influence of driving angular velocity, fluid viscosity and other factors on the movement of the stirrer through experiments

Mechanisms and Data Driven Hybrid (MDDH) Food System Model

Feb.2021

- As the team leader, participated in Mathematical Contest In Modeling in 2021, successfully passed the school selection and represented Tianjin University as one of the thirty teams
- Established a food system model driven by a mixture of mechanism and data, applied the concept of the energy hub to the analysis of the food system, comprehensively considered the interaction of factors such as technology and policy, and realized the evaluation of the sustainability and equity of the food system

LEADERSHIP EXPERIENCES

Deputy Director of Tianjin University Student Party School

Jun.2019 - Now

- Participated in student party building work, organized a series of training activities such as lectures for preparatory party members, and pioneered online party applicants' exams during the epidemic

Head teacher for freshmen of the college, monitor

Sept.2018 - Now

- Organized freshman week activities, made overall plans for class activities, won the first prize of class appraisal, shared learning experience with students and answered questions

Members of the practice team of Qiushi Honors College

Sept.2018 - Now

- Won the "Tianjin Excellent Practice Team" and went to eight provinces and cities including Xibaipo and Zhengding in Hebei Province, Zibo in Shandong Province, Jinggangshan in Jiangxi Province, and Shanghai for practice

SKILLS AND INTERESTS

- **Professional Skills:** Electrical Engineering (First Degree), Engineering Management (the only student in our department who got the qualification for double degree in Engineering Management)
- **Language Skills:** Chinese (native), English
- **Hobbies:** Volleyball (served as the setter and the captain of the college volleyball team), Calligraphy, Sketch