LI Jinjie

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EDUCATION

ShenYuan Honors College, Beihang University 09/2016 – (*Expected*) 06/2020
B. Eng. in Automation (Ranking: 4th in P. R. China)

- **Overall GPA:** 3.78/4.00 (89.70/100), **Ranking:** 6/66 **Major GPA:** 3.80
- **Highlight Courses:** Robotics, Machine Learning and Pattern Recognition, Design of Advanced Programming Language, Principle of Automatic Control, Fundamentals of Analog Electronics, Theoretical Mechanics
- **Research Interests:** Robotics, Multi-agent Systems

ACADEMIC PROJECTS

Detection and Tracking of Abnormal Behaviors 06/2019 – 09/2019
Institute of Automation, Chinese Academy of Sciences Advisor: *Research Associate* YUAN Fei

- Developed and implemented a deep neural network-based real-time detection system for abnormal behaviors such as intruding, height-passing, and border-crossing actions. My TensorFlow implementing YOLO v3 algorithm achieved a detection accuracy of 90%+ and low latency within a resource-constrained device.
- Mastered the use of TensorFlow and practiced the programming ability of Python and C++.
- *GitHub link: https://github.com/Li-Jinjie/Deepsort_yolov3*

Designing and Optimization of a Solar Aircraft 03/2018 – 10/2018
Beihang Aeromodelling Team, **Pilot** Advisor: *Professor* WAN Zhiqiang

- Designed and manufactured a 3kg-weighted aircraft that relies entirely on solar panels to provide power. The aircraft adopts a canard configuration, wing-tip aileron design, and a 6.15m wing uses the composite double-beam diagonal bracing structure. The maximum loading mass is 7kg under the ideal illumination of 120,000 lux.
- Mastered fixed-wing flying skills and improved the psychological quality of resisting setbacks.
- Won the Third Prize of 2018 China Aeromodelling Design Challenge (Solar Aircraft Project).
- *Website: https://lijinjie.top/Projects/Solar_Aircraft/*

Development of a Settable Constant Temperature Controller 02/2018 – 06/2018
Course: Fundamentals of Analog Electronics, **Team Leader** Advisor: *Associate Professor* TANG Yao

- Designed and developed a constant temperature control system, which can set and maintain the temperature between 50°C ~ 100°C. With the error range less than 2°C, the system can be controlled via Bluetooth, powered by 220V, and warmed up or cooled down to a specified temperature in 5 minutes.
- Mastered the C programming of STM32 microcontroller, PCB design, and accumulated experience in circuit debugging.
- As the only work close to a product, it was evaluated highly and chosen as a standard by the advisor.
- *Website: https://lijinjie.top/Projects/Temperature_Controller/*

A New Type of Bionic Autonomous Integrated Navigation System 11/2017 – 11/2018
National Key Laboratory of Science and Technology on Aircraft Control, **Projector** Advisor: *Professor* GUO Lei

- Designed a new autonomous navigation system, which integrates an inertial measurement unit (IMU), a bionic polarization sensor (BPS), and an air data system (ADS). Focused on BPS design and UAV flight test.
- Mastered the C programming of communication protocols such as I2C, SPI and UART, and circuit design and filtering methods of MEMS including accelerometer, gyroscope, light sensor, pressure sensor, and GPS module.
- Won the **Second** Prize in the 28th "Feng Ru Cup" Competition of Academic and Technological Works.
- *Website: https://lijinjie.top/Projects/Navigation_System/*

Designing of Heavy Load and High Maneuverability Aircrafts (Composite Material Part) 07/2017 – 10/2018
Beihang Aeromodelling Team, **Leader of the Composite Material Team** Advisor: *Professor* WAN Zhiqiang

- Designed and produced the composite part of a high-mobility load aircraft with the ideal maximum load of 24kg, the maximum take-off weight of 27.5kg, and the ideal flight speed of 15m/s.
- Adopted the carbon-PMI-carbon sandwich structure to make the 130g-weighted single wing beam, outer twined with the Kevlar line; chose carbon and glass fiber reinforced polymer (CGFRP) to make D-box structure, increasing the torsional rigidity by 161.07%; used a CNC engraving mold to make the carbon fairings.
- Mastered the production process, mold design, and processing technology of carbon fiber composites.
- Won the **Top three** places in the 2018 China Aeromodelling Design Challenge (Time-limited Airdrop Project), the **best** record that could be achieved.
- *Website: https://lijinjie.top/Projects/Composite_material/*

Designing and Optimization of a Helicopter Remote Grab System 07/2017 – 10/2017

Beihang Aeromodelling Team, **Team Member** Advisor: *Professor* WAN Zhiqiang

- Designed and manufactured a system with a grab rack, a video graphic sampling device, and communication devices installed under an electric helicopter. It can grab colored balls into the specific bucket via remote control.
- Mastered the use of Computer Numerical Control milling machine, drilling machine, laser engraving machine, grinder, 3D printer, and various tools.
- Won the **Champion** of 2017 China Aeromodelling Design Challenge (Simulative Search and Rescue Project).
- *Website: https://lijinjie.top/Projects/Helicopter_grab/*

HONORS & AWARDS

- The Second Prize of Academic Excellence Scholarship 12/2018, 12/2019
- The First Prize of Social Work Scholarship 12/2018
- The Third Prize of "Solar Aircraft Project" in China Aeromodelling Design Challenge 10/2018
- The Second Prize in the "Feng Ru Cup" Competition of Academic and Technological Works (top 5%) 05/2018
- Merit Student Scholarship (top 8%) 09/2017, 09/2018
- The First Prize of Research and Innovation Scholarship 12/2017
- The Champion of "Simulated Search and Rescue Project" in China Aeromodelling Design Challenge 10/2017

ACTIVITIES

Cambridge University Science and Technology Exchange Camp 08/2019

- As a representative of the ShenYuan Honors College, visited the University of Cambridge, Imperial College London, and the University of Edinburgh. Attended lectures about robotics and applied physics and visited corresponding laboratories.

Beihang Aeromodelling Team 11/2016 – 11/2018

- Served as the outfield captain, the leader of the composite material team, the pilot of the solar airplane project, and the leader of the novice training team.

Beihang Photography Association 09/2016 – 09/2018

- Deputy Chief of photography skills department, teaching the skills of post-processing of photos.
- Organized "My Best 10 Photographs" photo collection activity for two years, covering more than 30 universities.

SKILLS & STANDARDIZED TESTS

- **TOEFL:** 106 (R 30, L 28, S 24, W 24)
- **GRE:** V 156, Q 170, A/W 3.0
- **Programming Skills:** C/C++ (Proficient), MATLAB (Proficient), Python (Primary)
- **Proficient Skills:** UAV production and flight (Fixed-wing, glider, quadrotor, and flapping-wings); Circuit design (Altium Designer and Multisim); Microcontroller programming (STM32 series); Basic mechanical structure design (SolidWorks and AutoCAD); Machining techniques (CNC); Multimedia production (Lightroom, Photoshop, Premiere, and After Effects); Linux (Ubuntu)
- **Interests:** Model airplanes, Photography (*https://500px.com/vcg-lijinjie*), Travel, Basketball, Skiing