# NIE JIAHAO

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## EDUCATION:

**Northwestern Polytechnical University (NWPU)**          *Sept.2016 to Jul.2020*

- Major: Information engineering          Ranking: Top 10.4% (5/48), Outstanding Graduate
- Overall GPA: 87.94 /100          Major GPA: 91.91/100
- TOEFL: 104 (R28+L29+S22+W25)          GRE:319 (Q170+V149+AW3.5)
- Core courses: Introductory Circuit Analysis (90), Signals and Systems (94), Fundamental of Digital Electronic Technique (90), Digital Signal Processing (93), Information Theory and Coding (98), Principles of Automatic Control (92), Machine Learning (90), etc.

## PROFESSIONAL EXPERIENCE

**Research Assistant at Center of Intelligent Acoustics and Immersive Communications, Northwestern Polytechnical University**          *Aug.2020 to Jul.2021*

**Research on Visible & Infrared Image Dataset for Human Detection**   *Jun.2021 to Present*

- Collected a well-designed Visible & Infrared image dataset
- Considered many potential implementation of the Visible & Infrared dataset
- Will process the dataset to eliminate distortion and make two sets of images aligned
- Will attempt to propose new method for human detection using this dataset

**Research on Action Recognition in Infrared Video**          *Dec.2020 to Jun.2021*

- Proposed a new method to recognize different actions in Infrared videos
- Adopted 3D Convolutional Neural Networks, Residual Fully-Connected Layers and Trasfer Learning Strategy to achieve the state-of-the-art results
- Submitted the paper to 2021 IEEE International Workshop on Machine Learning for Signal Processing (MLSP) and it is under review

**Research and Implementation of Head Pose Estimation in Video**     *Oct.2019 to Jul.2020*

- Used human attitude estimation technology to recognize the direction of human head rotation for the input camera
- Adopted neural network algorithm to further improve the camera recognition accuracy
- Combined with instance segmentation and Holographic projection technology to improve the display results

**Intern at Navigation Technology Engineering Center Laboratory,**
**Department of Precision Instrument, Tsinghua University**          *Jul.2019-Aug.2019*

- Researched, summarized, and compared design principles, manufacturing methods, and technical indicators
- Proposed personal feelings and opinions on industry development
- Put forward the scheme of improving Angle sensor to displacement sensor and proposed points for attention

**ROV Ⅰ &II**                                                                *May.2018-Aug.2019*

- Led the team to design the innovative disc shape design, communicated, and discussed with team members to promote group cooperation
- Utilized propeller, steering gear, and solenoid valve, to design a new water spraying and vector propulsion method
- Used STM32 SCM and ZigBee to realize wireless control of ROV movement
- Configured camera and multiple sensors for additional functionality

**Kinect and Sensor based Smart Home System**                              *May.2018-Apr.2019*

- Applied Kinect sensor to monitor human movements and conducted different functions towards various movements
- Used PC as the upper computer and Arduino control board as the lower computer
- Controlled the electrical equipment to automatically adjust document degree and other environmental parameters

## ACTIVITIES

- Member, Vice Minister, and Vice Chairman of Student Union of School of Marine Science and Technology of NWPU                                              *Sept.2016-Jun.2019*
- Participated in several voluntary activities including '1V1' Helping and Supporting Rongshui Students, short-term volunteer teaching, visiting the elderly people in homes
  *Sept.2016-Jun.2019*
- Chief Volunteer of the 6th National Marine Design and Construction of Craft Contest    *Aug.2017*

## AWARD

- NWPU School-level Outstanding Student Award (three times)                    *2016-2019*
- NWPU Special Scholarships (four times)                                       *2016-2019*
- NWPU Outstanding Graduate of the University, Outstanding Graduate of the College   *Jun.2020*
- China Marine Vehicle Design and Manufacture Contest Outstanding Winner and other four national awards                                                    *2016-2019*