# Jiahao Wang

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## Education

- **University of California, Los Angeles** — Los Angeles, CA
  *Cross-disciplinary Scholars in Science and Technology (CSST) Program* — *Jul. 2018 – Sep. 2018*
  GPA: 4.00/4.00, Advisors: Prof. Daniel Low and Prof. Anand Santhanam
- **Wuhan University** — Wuhan, China
  *Electronic Information Engineering, Candidate for Bachelor* — *Sep. 2015 – Present*
  GPA: 3.92/4.00, **Ranking: 1/351**, Member of the Excellent Engineering Program

## Publications

- **Jiahao Wang**, Jun Chen, Huihui Xu, Shuaibin Zhang, Xiaoguang Mei, Jun Huang, and Jiayi Ma, "Gaussian Field Estimator with Manifold Regularization for Retinal Image Registration", Signal Processing (IF 4.086), vol. 157, pp. 225-235, 2019. (pdf)
- **Jiahao Wang**, Zhenyu Han, Tianyang Chen, Sibo Xu, and Liqing Zhou, "Magnetic Stripe Authentication System for Handheld Devices", IEEE International Conference on Signal Processing, Communications and Computing (ICSPCC 2018), Oral Presentation, Sep. 14-17, 2018.
- Yong Ma, **Jiahao Wang**, Huihui Xu, Shuaibin Zhang, Xiaoguang Mei, and Jiayi Ma, "Robust Image Feature Matching via Progressive Sparse Spatial Consensus", IEEE Access (IF 4.098), vol. 5, pp. 24568-24579, 2017. (pdf)
- Qing Ma, Xu Du, **Jiahao Wang**, Yong Ma, and Jiayi Ma, "Robust Feature Matching via Gaussian Field Criterion for Remote Sensing Image Registration", Journal of Real-Time Image Processing (IF 2.588), vol. 5, no. 3, pp. 523-536, 2018. (pdf)

## Experience

- **VMware** — Beijing, China
  *Software Engineer Intern* — *Sep. 2018 – Apr. 2018*
  - **Olfactory Bulb Volume Measurement Using MRI Scans**:
    Developed a machine learning method to calculate olfactory bulb volume from MRI scans.
  - **Graph Mining on Open Source Repositories**:
    Visualized the relationship between GitHub repositories in a Force-directed Graph.
  - **Service Requests Alerting System**:
    Designed an intelligent alerting system to help the Global Support Services deal with customer requests.
- **University of California, Los Angeles** — Los Angeles, CA
  *Research Assistant, Advisors: Prof. Daniel Low and Prof. Anand Santhanam* — *Jul. 2018 – Sep. 2018*
  - **CT Image Segmentation**:
    Established a cGAN based method for the segmentation of organs in head and neck CT images.
    Developed a head and neck CT image auto-segmentation software for clinical use.
- **Wuhan University** — Wuhan, China
  *Research Assistant and Team Leader, Electronic Information School* — *Sep. 2015 – Present*
  - **Retinal Image Registration**:
    ***Research Assistant**, Multi Spectral Vision Processing Lab, Advisor: Prof. Jiayi Ma* *Dec. 2017 – Jun. 2018*
    Proposed a Gaussian field estimator with manifold regularization for retinal image registration.
    Achieved more than 96% precision and recall rates on partial overlapped multi-modal retinal image pairs.
    Used a sparse approximation to accelerate optimization and reduced the time complexity from $O(N^3)$ to $O(N)$.
  - **Robust Feature Matching**:
    ***Research Assistant**, Multi Spectral Vision Processing Lab, Advisor: Prof. Jiayi Ma* *Oct. 2016 – Dec. 2017*
    Developed a robust feature matching algorithm modeled by a non-parametric thin plate spline kernel.
    Built a progressive framework which could remove mismatches even when 80% of initial matches were outliers.

- **Portable Devices for Magnetic Stripe Authentication**:
  ***Team Leader**, National Undergraduate Scientific Research Project.* *Jan. 2016 – Sep. 2017*
  Developed portable devices that have strong reliability in identifying forged currency.
  Optimized banknote magnetic stripe signal detection algorithm by searching peaks in scale-space.
  Utilized the space between peaks as a feature and improved the accuracy of neural network and SVM by 5%.

## Selected Projects

- **Open Compass**: Big data analysis on open source repositories
- **Autoguru**: Text mining and machine learning based service request alerting system
- ARUNA: Head and neck CT image auto-segmentation
- IFMPI: Probabilistic inference based image feature matching

## Patents & Software Copyrights

- A Portable Banknote Magnetic Stripe Detector — First Inventor, ID: ZL201720216364.2
- Image Feature Matching Software Based on Spacial Consensus — First Author, ID: 2017SR469050
- Image Mosaicing Software Based on RANSAC — First Author, ID: 2017SR457789
- Forged Currency Identification Software Based on Peak Space Detection — First Author, ID: 2017SR464706
- Multi-function Electronic Weighing Scale System Based on FPGA — First Author, ID: 2017SR295777

## Honors

**Scholarships**

- Yu Gang-Song Xiao Scholarship, Wuhan University (1 in 97) — 2018
- Cross-Disciplinary Scholarship of Science and Technology (CSST), UCLA — 2018
- 50-50 Top University Abroad Study Scholarship, Wuhan University — 2018
- **National Scholarship** (top 2% of undergraduates all over China) — 2016, 2017
- First Class Scholarship, Wuhan University (top 6% of undergraduates) — 2016, 2017, 2018

**Awards**

- **Best Idea Award**, VMware China Borathon, VMware — 2018
- Best Research and Presentation Award, Electrical Engineering Group, UCLA CSST Program — 2018
- Wuhan University Merit Student Pacemaker (2 in 400) — 2018
- National Undergraduate Innovation Funding (G201610486088), Chinese Ministry of Education — 2016
- Second Prize, TI Cup Undergraduate Electronic Design Competition, Hubei Province — 2016
- Third Prize, The Chinese Mathematics Competitions, Hubei Mathematics Association — 2016
- Outstanding Individual of Summer Intern, Wuhan University — 2016
- Excellent Student Cadres, Wuhan University — 2016
- Dean's List, Wuhan University — 2016, 2017, 2018
- Merit Student, Wuhan University — 2016, 2017, 2018

## Skills

- Languages: Python, MATLAB, C, C++, Verilog HDL, LaTeX, etc.
- Circuits Design: Advanced Design System, MultiSim, Altium Designer, etc.
- Tools & Devices: Linux, Vim, Tensorflow, FPGA, Microprocessor, etc.

## Additional Information

**English**

- TOEFL-iBT: 110
- GRE: Verbal Reasoning 152 Quantitative Reasoning 170 Analytic Writing 3.5

**Activities**

- President of Excellent Engineering Class of Electronic Engineering, 38 Students — 2016, 2017, 2018
- Teaching Assistant of Signal and Systems, Electronic Information School, Wuhan University — 2018
- Judge of Electronic Innovation Competition, Electronic Information School, Wuhan University — 2018
- Academic Tutor for Freshmen, Wuhan University — 2017
- Vice Director of Academic Center, Electronic Information School, Wuhan University — 2017