

# Jia Zeng

+86 18092947516 | zengjia@mail.nwpu.edu.cn | zjjzeng.github.io

127 YouYi West Rd. Xi'an, China, 710072

## EDUCATION

### Northwestern Polytechnical University (NPU)

Xi'an, China

Bachelor of Engineering in Software Engineering

Sept. 2016 – Jun. 2020 (expected)

Honors/Awards:

- Scholarship for Outstanding Student at NPU (Academic Year 2016-2017, 2017-2018, 2018-2019)
- Second Prize in China Undergraduate Mathematical Contest in Modeling (Shaanxi)

Dec. 2017

## RESEARCH EXPERIENCE

### Research Assistant

Xi'an, China

Computer Vision Group, State Key Laboratory of Speech & Image Information Processing, NPU

May 2019 – Present

- **Image Re-Identification:** Developed model to re-identification vehicles and suitcases (**Status:** Completed)
  - \* Trained CNN with Pytorch frame for Re-id model baseline, further implemented reranking method to improve performance
  - \* Evaluated and fine tuned hyperparameters and loss functions of the model in training, post-processed data to rank gallery
  - \* Collaborated with master students to continue to apply data augmentation, adversarial training and model ensemble (res50/res101), resulting in 87.2% in rank1 and 64.3% in mAP
- **Study on popular object detection algorithms:** Conducted a systematic literature review in the field of object detection on both single-stage and two-stage detector including faster RCNN, SSD, YOLO, CornerNet, FPN, CenterNet and so on. Reproduced the algorithms by deep learning frames and tested on Microsoft COCO dataset, obtained nearly state-of-the-art results, and compared their performance/speed trade-off or other features. (**Status:** Completed)
- **Aerial image-based detection with UAV-captured data:** Solved challenges in UAV-captured image detection (**Status:** Ongoing)
  - \* Combined methods for crowd counting task to try to deal with the tiny objects caused by UAV specific altitude and angle
  - \* Prepared dataset in Pascal VOC format, applied label tool to generate XML format annotations and run shell for text files

## SELECTED PROJECTS

### Library Management System

Nov. 2018 – Jan. 2019

- Developed the library information management system based on Agile development methods
- Implemented registering and searching for reader class users and posting for librarian class users
- Wrote software documents for the project development process and used Git to manage the development versions

### Online Survey Website

Jun. 2018 – Jul. 2018

- Designed website style as user-interface and implemented the pages using Html/CSS
- Created a database with MySQL, set the server environment
- Implemented functions of logging in, voting and viewing results

### Mathematical Contest in Modeling – Provided Location Options for New Offices

Feb. 2018

- Led a team of 3 to investigate trends of global languages and offered location options for new offices
- Analyzed data to build prediction model and then locate the 6 offices for short term and long term, separately
- Engaged in algorithm development, programming in MATLAB for experiment and writing a paper

### Anipop (Xiaoxiaole) Elimination Game Development

Mar. 2017 – Apr. 2017

- Defined data structure, accomplished judging function and eliminating function in C++, then recursively eliminated
- Built a fancy GUI for the game with the aid of easyX library and OpenGL

## EXTRACURRICULAR ACTIVITIES

### Volunteer

National Model United Nations Conference, China

Oct. 2018

### Team Leader

Student Campus Ambassador, NPU

Jan. 2017

## SKILLS

Programming Languages	Python, C/C++, MATLAB, Java, PHP, SQL, R
Professional Technologies	Linux, Git, LaTeX, Database
Research Skills	Machine Learning, Deep Learning, Object Detection
Standard Tests	TOEFL 100; GRE V151+Q170+AW3.5