

# XIAOMOU HOU

+81 070-2039-0069 ◇ houxiaomou1997@outlook.com ◇ Chiba, Japan

## EDUCATION

---

### Master of Science

Oct, 2021 - Present

Sugiyama-Yokoya-Ishida Laboratory, Department of Complexity Science and Engineering  
The University of Tokyo, Chiba, Japan

### Bachelor of Geographical Information Science

Sep, 2016 - Jun, 2020

School of Geography and Planning  
San Yat-sen University, Guangzhou, China

GPA: 3.9/5.0 Rank: 12/60

## SKILLS

---

### Programming Languages

C/C++, Python, JavaScript

### Tools and Frameworks

PyTorch, React, Linux, Git, Matlab, ArcGIS, ENVI

### Languages

Chinese (Native); English (IETLS: 7.0, TOFEL: 92); Japanese (JLPT N1: 130)

## PROJECTS

---

### Enhancing Satellite Image Height Estimation via Fusing Street-view Depth

Oct, 2021 - Present

*Master Research Project*

- Problem: Estimating height from single-view satellite image is highly ill-posed. Existing methods that rely on only image color or texture cannot solve this problem at its root since no explicit contextual clues are included.
- Contribution: Proposed a novel framework which fuses contextual information from street-view images like occlusion and perspective into height estimation. As a result, this method improves accuracy by 10~20%.

### Cropland Extraction from UAV Imagery via Superpixel Segmentation

Oct, 2019 - Apr, 2020

*Bachelor Research Project*

- Problem: Pixel-level image segmentation algorithms usually face slow training speed and over-segmentation. Extracting cropland at pixel level may cause inconsistent results due to its irregular shape and ambiguous edge.
- Contribution: Different from end-to-end segmentation, I propose a strategy of superpixel segmentation first and then classification, which speeds up training, reduces misclassification and produces more consistent results.

### GeoHistory: Visualizing History on The Map

Apr, 2019 - Oct, 2019

*Entry for The National GIS Software Development Competition for College Students*

- Description: This WebGIS software is developed using React, PostgreSQL and MongoDB, which visualizes national boundaries of historical dynasties, the movement trajectories of historical celebrities and the locations of historical events (around China). It also provides functions such as spatial analysis and statistic analysis.
- Contribution: Front-end implementation; API implementation; Database management; UI design.

## EXPERIENCE

---

### Internship

Jun 2019 - Aug 2019

Guangzhou Institute of Geographical Information

*Guangzhou, China*

- Civil engineering surveying and report writing.
- Measurement error analysis and database management.

## AWARDS

---

- Third Prize (7/120) at The National GIS Software Development Competition for College Students Oct, 2019
- Scholarship for Excellent Students, Sun Yat-sen University Nov, 2017