XIAOMOU HOU

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EDUCATION

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| 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 |  |  |
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| 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 |  |  |
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| 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 Bachelor Research Project

Oct, 2019 - Apr, 2020

* 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

Entry for The National GIS Software Development Competition for College Students

Apr, 2019 - Oct, 2019

* 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

Guangzhou Institute of Geographical Information

Jun 2019 - Aug 2019

Guangzhou, China

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

AWARDS

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| • | 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 |