

## Education

### The French Naval Academy Research Institute (IRENav)

Ph.D in GEOMATICS

Feb. 2011 – Dec. 2014

Brest, France

- > Thesis title: An Ontologies and Agents Based Approach for Undersea Feature Characterization and Generalization
- > Committee: Eric SAUX (supervisor), Eric GUILBERT (supervisor), Christophe CLARAMUNT, Jacques TISSEAU, Bernard ESPINASSE, Sébastien MUSTIÈRE, Georges DUBOIS
- > This work was funded by the Research Grant Council of Hong Kong, the Consulate General of France in Hong Kong and the Région Bretagne in France under grant 0211/ARE 09011/00026102.

### Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University

M.Sc in GEOMATICS

Aug. 2009 – Jan. 2011

Hong Kong

- > Dissertation title: Terrain Feature Extraction at Different Levels
- > Supervisor: Associate Professor Eric Guilbert
- > GPA: 3.35(4)

### Hainan University

B.S. in COMPUTER SCIENCE AND TECHNOLOGY

Sept. 2003 – July 2007

Haikou, China

- > Dissertation title: The Research of Image Edge Detection Algorithm
- > GPA: 79(100)

## Work Experience

### ETH Zurich, Singapore-ETH Centre

Postdoctoral Researcher

Oct. 2015 – Present

Singapore

- > Research topic 1: Digital Underground: 3D mapping of utility networks
- > Research topic 2: The Growth and Evolution of City Infrastructure

### Hong Kong R & D center for Logistics and Supply Chain Management Enabling Technologies

Senior Researcher

Aug. 2014 – Aug. 2015

Hong Kong

- > Working in GIS cloud, E-banking and other projects.

### The Hong Kong Polytechnic University

Teaching Assistant (part time)

Jan. 2013 – May 2014

Hong Kong

- > Teaching lab of System Customisation and Development for the undergraduate student, includes basic skill of VB.net and Java programming in GIS and UML.
- > Teaching lab of GIS Engineering for the master student, includes spatial database designing and operating.

### Information Center of Hainan Land Environment and Resources

Computer Programmer

Sept. 2007 – June 2009

Haikou, China

- > Worked in the Program Department to design and produce software that can be used in the Land Environment and Resources services.

- › Technical director of The Second Land Survey Project Management System of Hainan province.

## Publications

### Refereed Journal Articles

- › **Jingya YAN**, Siow Wei Jaw, Kean Huat Soon, Andreas Wieser, and Gerhard Schrotter. "Towards an Underground Utilities 3D Data Model for Land Administration." *Remote Sensing* 11, no. 17 (2019): 1957. [doi](#)
- › **Jingya YAN**, Eric Guilbert, and Eric Saux. "An ontology-driven multi-agent system for nautical chart generalization." *Cartography and Geographic Information Science* (2016): 1-15. [doi](#)
- › **Jingya YAN**, Eric Guilbert, and Eric Saux. "An ontology of the submarine relief for analysis and representation on nautical charts." *The Cartographic Journal* 52, no. 1 (2015): 58-66. [doi](#)

### Conference Proceedings

- › **Jingya YAN**, Siow Wei JAW, Kean Huat SOON, and Gerhard SCHROTTER. "THE LADM-BASED 3D UNDERGROUND UTILITY MAPPING: CASE STUDY IN SINGAPORE." *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences*, Volume XLII-4/W15, 2019, pp.117-122. [doi](#)
- › **Jingya YAN**, Kean Huat SOON, Siow Wei JAW, and Gerhard SCHROTTER. "A LADM-based 3D Underground Utility Data Model: A Case Study of Singapore." 8th International FIG workshop on the Land Administration Domain Model (2019). [doi](#)
- › **Jingya YAN**, Siow Wei JAW, Rob Van Son, Kean Huat SOON, and Gerhard SCHROTTER. "Three-Dimensional Data Modelling for Underground Utility Network Mapping." *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences* 42.4 (2018). [doi](#)
- › Rob Van Son, Siow Wei JAW, **Jingya YAN**, Victor Khoo Hock Soon, Richard Loo Wei Kiah, Sandy Teo Shen Ni, Gerhard SCHROTTER. "A Framework for Reliable Three-dimensional Underground Utility Mapping for Urban Planning." *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences* 42 (2018). [doi](#)
- › Siow Wei Jaw, Rob Van Son, Victor Khoo Hock Soon, Gerhard Schrotter, Richard Loo Wei Kiah, Sandy Teo Shen Ni, and **Jingya YAN**. "The Need for a Reliable Map of Utility Networks for Planning Underground Spaces." 2018 17th International Conference on Ground Penetrating Radar (GPR). IEEE, 2018. [doi](#)
- › **Jingya YAN**. "Ontology-based approach to modeling interdependency of critical infrastructure." SRA 2017 Annual Meeting, Arlington, VA (2017).
- › **Jingya YAN** and Tang, Junqing. "Resilience-oriented Analysis of Risk Management and Ontologybased Categorisation of Hazards in interdependent Infrastructure Systems." SRA 2017 Annual Meeting, Arlington, VA (2017).
- › **Jingya YAN**, Eric Guilbert, and Eric Saux. "An ontology for the generalisation of the bathymetry on nautical charts." *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences* 2, no. 2 (2014): 1. [doi](#)
- › **Jingya YAN**, Eric Guilbert, and Eric Saux. "An ontology for submarine feature representation on charts." In: Parsons J., Chiu D. (eds) *Advances in Conceptual Modeling*. ER 2013. Lecture Notes in Computer Science, vol 8697. Springer, Cham. [doi](#)
- › **Jingya YAN**, Eric Guilbert, and Eric Saux. "A conceptual model for submarine feature description and generalisation in nautical chart production." *The 20th International Conference on Geoinformatics, Geoinformatics 2012*, Hong Kong (2012).

### Working Papers

- › **Jingya YAN**. "Extraction Urban Clusters from Geospatial Data: A Case Study from Switzerland." Paper presented at the COST (European Cooperation in Science and Technology) meeting, London, UK (2016). [doi](#)

## Research Interests

- Geospatial data management
- Geo-ontology
- 3D geospatial data model
- Digital twins of cities
- Digital Cartography

## Academic Activities

### Conference participation

Oral Presentation

- 8th FIG Land Administration Domain Model Workshop, Kuala Lumpur, Malaysia, Oct. 2019
- 14th 3D GeoInfo Conference 2019, Singapore, Sept. 2019
- ISPRS Technical Commission IV Symposium 2018, Delft, The Netherlands, Oct. 2018
- International Conference on Infrastructure Resilience 2018, Zurich, Switzerland, Feb. 2018
- The Society for Risk Analysis (SRA) Annual Meeting 2017, Washington, D.C., USA, Dec. 2017
- COST (European Cooperation in Science and Technology) Action TU1305: Social Networks and Travel Behaviour, London, UK, Nov. 2016
- The 20th International Conference on GeoInformatics, Hong Kong, June 2012

### Invited and campus talks

- ICRM Thematic Seminar Series, Topic: Developing reliable 3D mapping of underground utility networks, NanYang Technological University, Singapore, Oct. 2018
- Researchers Talk Series, Topic: A conceptual model for submarine feature description and generalisation in nautical chart production, The Hong Kong Polytechnic University, Hong Kong, April 2013

### Training

- Doctoriales Bretagne 2013, Rennes, France, Jan. 2013
- Summer School on Topological and Scaling Analyses of Transport and Social Media Data, Gävle, Sweden, June 2016

### Manuscript Reviewer

- Marine Geodesy
- Sustainability
- Land (Reviewer board)
- ISPRS International Journal of Geo-Information

### Memberships

- Open Geospatial Consortium, member in charter of the Model for Underground Data Definition and Interchange (MUDDI) SWG
- International Society for Photogrammetry and Remote Sensing, member

## Honors & Awards

### Young Researcher Travel Grant

*Society of Risk Analysis*

2017  
Washington, D.C., USA

### Travel Grant

*COST Action TU1305*

2016  
London, UK

### Student Travel Grant

*The summer school of COST Action TU1305*

2016  
Gävle, Sweden

## Best honorable of Ph.D Thesis

Universite de Brest

2014

Brest, France

## First-class scholarship

Hainan University

2005

Haikou, China

## First-class scholarship

Hainan University

2004

Haikou, China

## Skills

### Language

- > Mandarin (Native)
- > English (Fluent)
- > Cantonese (conversational)
- > French, German (Beginner)

### Computer Skills

- > **Programming:** JAVA, C++, PYTHON, R
- > **Databases:** PostreSQL, MySQL, Oracle, Virtuoso, UML
- > **Web development:** HTML, PHP, JSP, JAVASCRIPT, RDF, OWL, CSS
- > **Miscellaneous:** ArcGIS, Protégé, QGIS, MATLAB, ERMAP, Gephi, LATEX