Di Zhu

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EDUCATION

2014 – 2020
- **Ph.D.** in Cartology and Geographic Information Science.
  School of Earth and Space Sciences, Peking University (PKU)
  Thesis: Modelling and Analyzing Geospatial Distributions with Artificial Neural Networks

2010 – 2014
- **B.S.** in Geographic Information Systems.
  School of Earth and Space Sciences, Peking University
  Thesis: An Incremental Map-Matching Method Based on Road Network Topology

2011 – 2014
- **B.A.** in Economics.
  National School of Development, Peking University

EMPLOYMENT HISTORY

- **Assistant Professor**, Department of Geography, Environment and Society, University of Minnesota, Twin Cities (UMN) (2020 -)
- **Visiting Lecturer**, SpaceTimeLab, University College London (UCL) (2018, 2019)
- **Tutor**, Department of Civil Environmental & Geomatic Engineering, UCL (2019)
- **Research Assistant**, Geosoft Lab & S3 Lab, PKU (2016 - 2020)
- **Teaching Assistant**, School of Earth and Space Sciences, PKU (2016, 2017, 2018)
- **Teaching Assistant**, Institute of Remote Sensing and GIS, PKU (2015, 2016, 2017)
- **Co-Founder & Chief Product Officer** at Beijing Jikewenqing (GeekArt) Technology Co. Ltd. (2018 - 2020)
- **Software Engineer Intern** at Beijing LongRuan Technology Co. Ltd. (Summer 2015)
- **Data Visualization Intern** at Geosoft Lab, PKU (Summer 2013)
- **RS, GIS & GPS Practice Intern** at School of Earth and Space Sciences, PKU (Summer 2012)
- **Geology Field Trip Intern** at School of Earth and Space Sciences, PKU (Summer 2011)

HONORS,AWARDS AND FUNDINGS

2020
- **Start-up Funding for New Faculty**, University of Minnesota ($ 100,000)
- **Distinction of Doctoral Thesis**, Peking University
- **Excellent Graduates**, Peking University

2019
- **China National Scholarship**, Ministry of Education, P. R. China (RMB 30,000)
- **Tang Lixin Scholarship**, Peking University (RMB 10,000)
- **Early Career Scholarship**, GIS Research UK (£ 220 and free conference registration)
- **Travel Award**, Annual Meeting of American Association of Geography, Applied Geography Speciality Group ($ 250)
- **Outstanding Student Award**, Peking University

HONORS,AWARDS AND FUNDINGS (continued)

2018
- **State Scholarship Fund of China**, China Scholarship Council (£ 16,200 and travel stipend)
- **Presidential Fellowship**, Peking University (RMB 60,000 and tuition)
- **Tang Lixin Scholarship**, Peking University (RMB 10,000)
- **Rising Star Award**, College GIS Forum (CGF), China
- **Outstanding Student Award**, Peking University

2017
- **Tang Lixin Scholarship**, Peking University (RMB 10,000)
- **Research Assistant Scholarship**, Peking University (RMB 45,000)

2016
- **First Class Postgraduate Scholarship**, Peking University (RMB 8,000)
- **Excellent in Academics Award**, Peking University

2015
- **First Class Postgraduate Scholarship**, Peking University (RMB 8,000)
- **Individual Scholarship for Outstanding Scientific Research**, Peking University

2014
- **First Class Postgraduate Scholarship**,Peking University (RMB 8,000)
- **Longruan Technology Award**, Beijing LongRuan Technology Co. Ltd. (RMB 5,000)

2012
- **Third Prize in P&G Challenge**, Beijing, China
- **Founder Scholarship**, Peking University (RMB 5,000)

2011
- **54 Scholarship**, Peking University (RMB 1,500)
- **Outstanding Student Award**, Peking University

RESEARCH INTERESTS

- Geography, GIScience, Spatio-temporal Modelling, GeoAI, Big Geo-Data Analytics, Social Sensing, Spatial Statistics, Spatial Data Mining, Urban Computing, Spatial Optimization, Complex Network, Graph Theory, Geovisualization, Generative Models, Human Mobility, Population, Transportation, Public Health, Economic Geography.

ACADEMIC EXPERIENCES

Journal Articles (*: correspondence)

1 Chen, T., Bowers, K. & **Zhu, D.***. (2022). The spatio-temporal stratified association between human activities and crime patterns during the covid-19 stay-at-home mandate. (under review).

2 Zhang, Y., Yu, W. & **Zhu, D.** (2022). Terrain features-aware deep learning network for digital elevation model super-resolution. (under review).

3 **Zhu, D.***, Liu, Y., Yao, X. & Fischer, M. M. (2021). Spatial regression graph convolutional neural networks: A deep learning paradigm for spatial multivariate distributions. ***GeoInformatica***, *1-32*. https://doi.org/10.1007/s10707-021-00454-x

4 **Zhu, D.***, Ye, X. & Manson, S. (2021). Revealing the spatial shifting pattern of COVID-19 pandemic in the united states. ***Nature Scientific Reports***, *11*(8396). https://doi.org/10.1038/s41598-021-87902-8

5 **Zhu, D.**, Zhang, F., Wang, S., Wang, Y., Cheng, X., Huang, Z. & Liu, Y. (2020). Understanding place characteristics in geographic contexts through graph convolutional

neural networks. ***Annals of the American Association of Geographers***, *110*(2), 408–420. https://doi.org/10.1080/24694452.2019.1694403

6 **Zhu, D.**, Cheng, X., Zhang, F., Yao, X., Gao, Y. & Liu, Y. (2019). Spatial interpolation using conditional generative adversarial neural networks. ***International Journal of Geographical Information Science***, *34*(4), 735–758. https://doi.org/10.1080/13658816.2019.1599122

7 **Zhu, D.**, Huang, Z., Shi, L., Wu, L. & Liu, Y. (2018). Inferring spatial interaction patterns from sequential snapshots of spatial distributions. ***International Journal of Geographical Information Science***, *4*(32), 783–805. https://doi.org/10.1080/13658816.2017.1413192

8 **Zhu, D.**, Wang, N., Wu, L. & Liu, Y. (2017). Street as a big geo-data assembly and analysis unit in urban studies: A case study using beijing taxi data. ***Applied Geography***, *86*, 152–164. https://doi.org/10.1016/j.apgeog.2017.07.001

9 **Zhu, D.** & Liu, Y. (2018). Modelling irregular spatial patterns using graph convolutional neural networks. ***arXiv preprint***, arXiv:1808.09802. https://arxiv.org/abs/1808.09802

10 Zhang, S., **Zhu, D.*** △, Yao, X., Cheng, X., He, H. & Liu, Y. (2018). The scale effect on spatial interaction patterns: An empirical study using taxi o-d data of beijing and shanghai. ***IEEE Access***, *6*, 51994–52003. (△: co-first authorship). https://doi.org/10.1109/ACCESS.2018.2869378

11 **Zhu, D.** & Liu, Y. (2017a). An incremental map-matching method based on road network topology. ***GEOMATICS AND INFORMATION SCIENCE OF WUHAN UNIVERS***, *42*(1), 77–83. http://ch.whu.edu.cn/EN/10.13203/j.whugis20150016

12 **Zhu, D.** & Liu, Y. (2017b). Urban dynamics from multi-source big geo-data. ***E-Science Technology & Application***, *8*(3), 7–17. http://escj.cnic.cn/EN/10.11871/j.issn.1674-9480.2017.03.002

13 Huang, X., **Zhu, D.**, Zhang, F., Liu, T., Li, X. & Zou, L. (2021). Sensing population distribution from satellite imagery via deep learning: Model selection, neighboring effect, and systematic biases. ***Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, *14*, 5137–5151. https://doi.org/10.1109/JSTARS.2021.3076630

14 Wang, Y., **Zhu, D**, Liu, Y., Yin, G. & Huang, Z. (2020). Understand public transport efficiency with spatial multigraph analysis. ***Nature Scientific Reports***, *10*, 9573. https://doi.org/10.1038/s41598-020-65175-x

15 Aslam, N., **Zhu, D.**, Cheng, T., Ibrahim, M. & Zhang, Y. (2020). Semantic enrichment of secondary activities using smart card data and point of interests: A case study in london. ***Annals of GIS***. https://doi.org/10.1080/19475683.2020.1783359

16 Yao, X., Gao, Y., **Zhu, D.**, Manley, E., Wang, J. & Liu, Y. (2020). Spatial origin-destination flow imputation using graph convolutional networks. ***IEEE Transactions on Intelligent Transportation Systems***. https://doi.org/10.1109/TITS.2020.3003310

17 Xing, X., Huang, Z., Cheng, X., **Zhu, D.**, Kang, C., Zhang, F. & Liu, Y. (2020). Mapping human activity volumes through remote sensing imagery. ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, *13*, 5652–5668. https://doi.org/10.1109/JSTARS.2020.3023730

18 Zhang, F., Zu, J., Hu, M., **Zhu, D.**, Kang, Y., Gao, S., … Huang, Z. (2020). Uncovering inconspicuous places using social media check-ins and street view images. ***Computers,***

Environment and Urban Systems, *81*(101478), 1–13. https://doi.org/10.1016/j.compenvurbsys.2020.101478

19 Zhang, F., Wu, L., **Zhu, D.** & Liu, Y. (2019). Social sensing from street-level imagery: A case study in learning urban mobility patterns. ***ISPRS Journal of Photogrammetry and Remote Sensing***, *153*, 48–58. https://doi.org/10.1016/j.isprsjprs.2019.04.017

20 Chen, L., Gao, Y., **Zhu, D**, Yuan, Y. & Liu, Y. (2019). Quantifying the scale effect in geospatial big data using semi-variograms. ***PloS one***, *14*(11), e0225139–e0225139. https://doi.org/10.1371/journal.pone.0225139

21 Yao, X., **Zhu, D.**, Gao, Y., Wu, L., Zhang, P. & Liu, Y. (2018). A stepwise spatio-temporal flow clustering method for discovering mobility trends. ***IEEE Access***, *6*, 44666–44675. https://doi.org/10.1109/ACCESS.2018.2864662

22 Yao, X., Wu, L., **Zhu, D.**, Gao, Y. & Liu, Y. (2018). Visualizing spatial interaction characteristics with direction-based pattern maps. ***Journal of Visualization***, 1–15. https://doi.org/10.1007/s12650-018-00543-4

23 Wu, L., Cheng, X., Kang, C., **Zhu, D.**, Huang, Z. & Liu, Y. (2018). A framework for mixed use decomposition based on temporal activity signatures extracted from big geo-data. ***International Journal of Digital Earth***. https://doi.org/10.1080/17538947.2018.1556353

24 Liu, Y., Zhan, Z., **Zhu, D.**, Chai, Y., Ma, X. & Wu, L. (2018). Incorporating multi-source big geo-data to sense spatial heterogeneity patterns in urban space. ***GEOMATICS AND INFORMATION SCIENCE OF WUHAN UNIVERS***, *43*(3), 327–335. http://ch.whu.edu.cn/EN/abstract/abstract5988.shtml

Books (*: correspondence)

1 **Zhu, D.*** & Hu, Y. (2022). Concise encyclopedia of human geography. (Chap. Artificial Intelligence). (forthcoming). Edward Elgar Publishing.

Conferences

1 Chen, T., Cheng, T. & **Zhu, D.** (2021). The exploration of human activity zones using geo-tagged big dataduring the covid-19 first lockdown in london, uk. In *Proceedings of the 29th Conference on GIS Research UK (GISRUK 2021)*. Apr. 13-16, Cardiff University, United Kingdom.

2 Chen, T. & **Zhu, D.***. (2021). The spatio-temporal stratified association between human activities and crime patterns during the covid-19 stay-at-home mandate. In *Proceedings of the 2021 ACM SIGSPATIAL China Annual Conference on Space Intelligence (SpatialDI 2021)*. Apr., Hangzhou, China.

3 **Zhu, D.***, Cheng, T. & Liu, Y. (2019). Geo-propagation from incomplete spatial distribution data: A case study of house price estimation. In *Proceedings of the 27th Conference on GIS Research UK (GISRUK 2019)*. Oral presentation, Apr. 23-26, Newcastle upon Tyne, United Kingdom.

4 Soundararaj, B. & **Zhu, D.** (2019). Estimating pedestrian flow from footfall counts using geo-propagation. In *Annual Conference on Complex Systems (CCS 2019)*. Sep. 30 - Oct. 4, Singapore.

5 Wang, Y., **Zhu, D.**, Yin, G., Huang, Z. & Liu, Y. (2019). Investigating local travel speed with spatial network structures and properties. In *Proceedings of the 2nd International Conference on Urban Informatics (ICUI 2019)*. June 24-26, Hong Kong, China.

6 **Zhu, D.***, Cheng, X., Zhang, F., Gao, Y. & Liu, Y. (2019). Spatial interpolation based on conditional generative adversarial neural network. In *AAG annual meeting, GeoAI and Deep Learning Symposium: Deep Learning of Geospatial Patterns & Applications*. Oral Presentation, Apr. 5, Washington D.C., USA.

7 **Zhu, D.*** & Liu, Y. (2018). Modelling spatial patterns using graph convolutional networks (Short Paper). In *Proceedings of the 10th International Conference on Geographic Information Science (GIScience 2018)*. Oral presentation, Aug. 28-31, Melbourne, Australia.

8 Xing, X., **Zhu, D.**, Cheng, X. & Liu, Y. (2018). Population mapping based on deep features of remote sensing imagery. In *Proceedings of the 26th International Conference on Geoinformatics*. June 28-30, Kunming, China.

9 Chen, L., **Zhu, D.** & Liu, Y. (2018). Quantify the scale effect in geospatial big data using semi-variograms. In *Proceedings of the 26th International Conference on Geoinformatics*. June 28-30, Kunming, China.

10 **Zhu, D.**, Shi, L., Wang, Y., Cheng, X. & Liu, Y. (2017). Infer spatial interaction patterns from spatial distributions. In *Proceedings of the 25th International Conference on Geoinformatics*. Oral Presentation, Aug. 2-4, Buffalo, USA.

11 **Zhu, D.**, Wang, N. & Liu, Y. (2016). Street perspective: A novel spatial unit in urban social sensing. In *Proceedings of the 17th international symposium on spatial data handling (SDH 2016)*. Oral presentation, Aug. 18-20, Beijing, China.

12 **Zhu, D.** & Liu, Y. (2016). The distance effect in spatial interaction and spatial similarity: A big data view of tobler's first law. In *Proceedings of the 33rd International Geographical Congress (IGC 2016)*. Oral presentation, Aug. 21-23, Beijing, China.

Invited Talks

1 **Zhu, D.** (2021a). Inferring spatial interaction pattern from spatial distribution snapshots. *Invited talk in China Data Lab 2021 Workflow Webinar @ Wuhan University & Harvard University*. June 18, online livestream.

2 **Zhu, D.** (2021b). Intelligent spatial understanding: Representation, modeling and prediction. *Invited talk in CPGIS 2021 GeoAI Seminar Series @ China University of Geosciences*. May 9, online livestream.

3 **Zhu, D.** (2021c). Linkages between spatial regression and graph neural networks. *Invited talk in the 5th GIScience Symposium @Peking University, Beijing Normal University, and CAS*. Apr 17, online livestream.

4 **Zhu, D.** (2020a). Intelligent spatial prediction: Rethinking geospatial modeling in the era of GeoAI. *Invited talk in the Annual Conference of Geomatics and GIScience@Central South University*. Dec. 26, Changsha, China.

5 **Zhu, D.** (2020b). Intelligent spatial prediction in incomplete-data scenarios. *Invited talk in CPGIS 2020 GeoAI Seminar Series@China University of Geosciences*. May 6, online livestream.

6 **Zhu, D.** (2019). Inferring national migration flows from sequential population snapshots. *Invited talk in Geospatial Seminar@UCL, Department of Civil Environmental & Geomatic Engineering, UCL*. Feb. 21, London, United Kingdom.

7 **Zhu, D.** (2018). Spatial prediction using black-box models. *Invited talk at SpaceTimeLab, UCL*. Oct. 12, London, United Kingdom.

8 **Zhu, D.** (2017a). About spatial heterogeneity patterns. *Poster Presentation in Academic Star Competition, School of Earth and Space Sciences, PKU*. Feb. 26, Beijing, China.

9 **Zhu, D.** (2017b). Intelligent sensing of urban space in street perspective. *Invited talk in Intelligent Transportation Systems Seminar, Institute of Remote Sensing and GIS, PKU*. Oct. 17, Beijing, China.

10 **Zhu, D.** (2017c). A map visualization of the air quality index in china. *Oral Presentation in ChinaVis Data Challenge at the 3rd China Visualization and Visual Analytics Conference (ChinaVis 2016)*. July 23, Changsha, China.

PROJECTS EXPERIENCE

2021.09-present
- **Start-up Funding for New Faculty at University of Minnesota (1000-10964-20042-5672018)**: Intelligent Spatial Models and Analytical Methods. (**PI** at GeoDI Lab)
  - Explore the frontier of Geospatial Artificial Intelligence, and bridge the methodological linkage between deep/machine learning models and spatial analytical models with a focus on human-environment complexities within socioeconomic and population data.

2020.09–present
- **National Spatiotemporal Population Research Infrastructure (2R01HD057929-11)**: National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development (collaboration with Minnesota Population Center)

2019.01-2021.01
- **The Major Program of the National Natural Science Foundation of China (no. 41830645)**: Theoretical and analytical methods of spatial interaction networks in geospatial big data. (**Research Assistant** at PKU Geosoft Lab)
  - Investigate systematic methods for analyzing multi-modal spatial networks at different spatio-temporal scales. Develop a WebGIS platform and apply to: city (Shenzhen), megalopolis (Guangdong-Hong Kong- Macau Big Bay Area), and nation (China).

2017.01-2020.07
- **National Natural Science Fund for Distinguished Young Scholars (no. 41625003)**: Geo-spatial models and analytical methods. (**Research Assistant** at PKU Geosoft Lab)
  - Investigate human behavior characteristics from the perspective of the interaction between people and geographical environment with the support of big geo-data and deep learning methods using PyTorch on Linux.

2017.07-2020.07
- **National Key Research and Development Program of China (no. 2017YFB0503602)**: Multi-sensing of urban locations with big geo-data. (**Research Assistant** at PKU Geosoft Lab & Chinese Academy of Sciences)
  - Represent and model diverse geospatial semantics of locations and develop spatial prediction approaches incorporating locations' relatedness.

PROJECTS EXPERIENCE (continued)

2018.10-2019.10
- **China Scholarship Council Funding (no. 201806010077)**: Modelling spatial heterogeneity and spatial interactions from the big geo-data perspective (**PI** at SpaceTimeLab, UCL).
  - Develop a spatio-temporal Geo-propagation method for sparse geo-spatial data prediction with an application of the house price estimation in Beijing from 2011-2018.

2018.06-2020.12
- **A 2C location recommender and time planning Map App for offline meetup** (**Co-Founder & Chief Product Officer** at Beijing Jikewenqing Technology Co. Ltd.)
  - Integrate existing algorithms of location-related schedule planning and location recommendation in the context of clients' business scenarios: negotiate time according to every participant's schedule and activity preference.

2018 Spring
- Inferred Migration Map in China: Tencent's Positioning data during 2016's Spring Festival. (**Main Developer** of PKU Geosoft Lab Team Work)
  - `https://dizhu-gis.github.io/pages/flow.html`
  - City-level migration flows inferred from two snapshots of population distributions that are captured before and during the Spring Festival, respectively.

2018 Summer
- Visualization of 2014's Weibo check-in data on Beijing Points on Interest (POIs). (**Main Developer** of PKU Geosoft Lab Team Work)
  - `https://dizhu-gis.github.io/pages/interactive_map_new.html`
  - Support the query of geographic places in Beijing urban areas and the corresponding POIs.

2015 Summer
- Visualization of taxi mobility patterns in Shanghai. (**Main Developer** of PKU Geosoft Lab Team Work)
  - Pick-ups and Drop-offs: `https://youtu.be/iCRaJlZc5b8`
  - Trajectories: `https://youtu.be/sb39SE52cFY`
  - Incorporate Shanghai taxi trajectories in June, 2009 to visually recognize human mobility patterns within the city scale.

2013.01-2016.12
- **National Natural Science Foundation of China (no. 41271386)**: Investigating human mobility pattern based on massive spatio-temporal data. (**Student Assistant** at PKU Geosoft Lab)
  - Investigate the GPS-enabled taxis' origin and destination (OD) distributions, mobility patterns and relations with urban structure, street networks. Develop spatio-temporal data mining algorithms for processing large-scale geo-data using Python and PostgreSQL.

TEACHING EXPERIENCE

- **Lecturer** for *GEOG 3531/5531: Numerical Spatial Analysis* (2021- at UMN)
- **Lecturer** for *GEOG 8990: Geospatial Artificial Intelligence* (2021- at UMN)
- **Tutor** for *CEGE 0097: Spatial Analysis and Geocomputation* (2019 at UCL)
- **Guest Lecturer** for *Geospatial Seminar of CEGE 0097: Spatial Analysis and Geocomputation* (Spring 2019 at UCL)
- **Teaching Assistant** for *04831410: Introduction to Computation* (2016, 2017, 2018 at PKU)
- **Guest Lecturer** for *01213660: Intelligent Transportation Systems* (Fall 2017 at PKU)
- **Teaching Assistant** for *01213610: GIS Algorithms and Applications* (2016, 2017 at PKU)
- **Teaching Assistant** for *01235080: Geo-mathematical Models* (2015 at PKU)
- **Teaching Assistant** for undergraduate/M.Sc dissertation designing and writing (2017 at SESS, PKU)

PROFESSIONAL SERVICES

- 2021 -: **Peer Reviewer** for *Journal of Planning Education and Research*
- 2021 -: **Peer Reviewer** for *Humanities and Social Sciences Communications*
- 2021 -: **Peer Reviewer** for *International Journal of Applied Earth Observation and Geoinformation*
- 2021 -: **Peer Reviewer** for *ISPRS International Journal of Geo-Information*
- 2021 -: **Peer Reviewer** for *International Journal of Digital Earth*
- 2021 -: **Peer Reviewer** for *Stochastic Environmental Research and Risk Assessment*
- 2021 -: **Peer Reviewer** for *Cartography and Geographic Information Science*
- 2021 -: **Peer Reviewer** for *CRC Press - Taylor & Francis Group*
- 2021 -: **Peer Reviewer** for *Geomatics and Information Science of Wuhan University*
- 2020 -: **Peer Reviewer** for *Computational Urban Science*
- 2020 -: **Peer Reviewer** for *Transactions on Spatial Algorithms and Systems*
- 2020 -: **Peer Reviewer** for *Cities*
- 2020 -: **Peer Reviewer** for *Annals of the American Association of Geographers*
- 2020 -: **Peer Reviewer** for *Nature Scientific Reports*
- 2020 -: **Peer Reviewer** for *Geo-spatial Information Science*
- 2018 -: **Peer Reviewer** for *International Journal of Geographical Information Science*
- 2018 -: **Peer Reviewer** for *Applied Geography*
- 2018 -: **Peer Reviewer** for *PLOS ONE*
- 2018 -: **Peer Reviewer** for *IEEE Transactions on Industrial Informatics*
- 2018 -: **Peer Reviewer** for *IEEE ACCESS*
- 2017 -: **Peer Reviewer** for *Computers, Environment and Urban Systems*
- 2017 -: **Peer Reviewer** for *Acta Geodaetica et Cartographica Sinica*
- 2016 -: **Peer Reviewer** for *Spatial Statistics*
- 2021: **Program Committee Member** for the 4th International Workshop on AI for Geographic Knowledge Discovery (GeoAI'21)
- 2020: **Session Chair** for the 28th Geographical Information Science Research UK Conference (GISRUK'20)

PROFESSIONAL SERVICES (continued)

- 2019: **Program Committee Member** for the 3rd International Workshop on AI for Geographic Knowledge Discovery (GeoAI'19)
- 2019: **Student Board Member** for *American Association of Geographers Applied Geography Specialty Group*
- 2018: **Student Assistant** for the 35th Hongmen Dialogue of Peking University: Spatio-Temporal Big Data and Smart City (PKU).
- 2018: **Student Assistant** for the 2nd Youth Scholar Symposium of RS and GIS (PKU).
- 2017: **Student Assistant** for the 2nd Symposium on GIScience (Beijing).

COMMUNITY SERVICES

2019 June
- **Conference Volunteer** for the Festival of AI and Emerging Technology (CogX 2019) (London, UK)
    - Facilitating the transparent information exchange between academic scholars and the government.

2012-2013
- **Head of Propaganda Department** for Student Union in School of Earth and Space Sciences, PKU. (Beijing, CN)
    - Lead a team of more than 20 students to serve for over 600 Chinese students and scholars to give publicity of Earth/Environmental Science.

2015 June
- **Volunteer teaching** of Geometry and Math for K-12 education during the Open Day of Tomorrow Advancing Life (TAL Education Group) (Beijing, CN)