哈斯巴干 简历

2023 年 3 月 2 日

研究员，博士生导师

上海师范大学 环境与地理科学学院
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一、学习和工作经历

学习经历

1986.09 - 1991.07	北京大学 数学系 本科 学士学位
1993.09 - 1996.04	北京航空航天大学 理学院 应用数学系 硕士学位
1999.04 - 1999.10	日本 北海道大学 经济学研究科 研究生
2001.03 - 2004.03	中国科学院 遥感应用研究所 博士学位

工作经历

2016.09 - 现在	上海师范大学 环境与地理科学学院 教授（研究员）
2017.06 - 现在	东京大学 生产技术研究所 Research fellow
2013.03 - 现在	日本 国立环境研究所 Regional Environment Conservation Division, 客座研究员
2013.06 - 2016.08	日本 茨城大学 农学部 研究员
2013.03 - 2013.05	澳大利亚 Flinders 大学 MLFP 研究员
2008.08 - 2013.02	日本 国立环境研究所 地球环境研究中心 NIES fellow
2006.04 - 2008.07	东京大学 生产技术研究所 JSPS 研究员
2004.04 - 2006.03	日本 国立环境研究所 水土壤研究领域 NIES postdoctoral fellow
1996.05 - 1999.03	蒙古国 ERDENET 矿业公司 北京办事处 职员
1991.09 - 1993.08	内蒙古师范大学 数学系 助教

其他兼职

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二、主持的科研项目

1) **主持**，2023-2026， 国家科技部，国家重点研发计划政府间重点专项项目(项目编号：2022YFE0119500)
2) **主持**，2022-2025， “结合碳观测卫星和地面观测对长三角地区甲烷和二氧化碳的排放量进行估算和评估”，**上海市科委**，上海市地方院校能力建设专项 (项目编号：22010503600)
3) **主持**，2018-2021， “结合样本优化和核学习子空间的多源异质遥感数据分类及城市应用”，**国家自然科学基金**，**常规面上项目** (项目编号：41771372)
4) **主持**，2021-2026， “Spatiotemporal analysis of atmospheric greenhouse gases distribution using GOSAT data in China”，**日本**环境省 GOSAT 系列碳卫星项目(The 3rd GOSAT RA) (项目编号：PI No: 3RA-02)
5) **主持**，2022-2025, “Combining ALOS series Optical and SAR imagery for local climate zone classification”，**日本**宇宙航空研究开发机构 (*JAXA* PI No. ER3A2N149)
6) **主持**，2018-2020， “多源遥感数据融合与核子空间方法相结合的城市扩展研究”，**上海市科委**，高新技术科技攻关项目 (项目编号：18511102300)
7) **主持**，2016-2021， “Land-cover classification using ALOS-2 in China and Mongolia”，**日本**宇宙航空研究开发机构 (The Japan Aerospace Exploration Agency: JAXA; PI No. 3398)
8) **主持**，2016-2022， “基于多源遥感数据的城市扩展研究”，**上海师范大学**引进人才科研启动项目

9) **主持**，2013-2018， “Land Cover Classification Using ALOS PALSAR, AVNIR-2, and PRISM in Ulaanbaatar”，**日本**宇宙航空研究开发机构 (The Japan Aerospace Exploration Agency: JAXA; PI No. 1007)
10) **主持**，2013, Fellowship “Comparison of urban growth patterns in Adelaide and Tokyo”, **澳大利亚** Mawson Lakes Foundation 项目
11) **主持**，2006-2008 “Evaluation of long-term vegetation change in Asian region with climate change,” **日本**科技振兴会 (JSPS PI No. 18・06170)

三、承担的本科和研究生课程

硕士：资源环境遥感；学术规范与论文指导

本科：概率论与数理统计；环境遥感

指导的研究生获优秀论文奖：

1. 侯欣言： The 43nd Asian Conference on Remote Sensing，“Research on the spatiotemporal distribution of XCO_2 emissions based on GOSAT satellites in China”, 2022 年 10 月 2-5 日 (Ulaanbaatar, Mongolia)
2. 陈曦: 上海市红外与遥感学会 2021 年年会“优秀论文奖”：“东京建筑密度、高度、地表温度和人口密度之间的定量分析”, 2021 年 11 月 25 日
3. 陈曦： The 42nd Asian Conference on Remote Sensing，“Quantitative analysis of relationships among building density, height, land surface temperature, and population density in Tokyo”, 2021 年 11 月 22-24 日 (Can Tho, 越南)
4. 谢璇:上海市红外与遥感学会 2020 年年会“优秀论文奖”：“城市化引起的土地覆被变化时空分析 —以长三角生态绿色一体化发展示范区为例”, 2021 年 12 月 9 日

四、外语水平及专业特长

英 语：听说读写熟练；在 Flinders 大学进行过研究工作
日 语：听说读写熟练；日常工作语言为日语
扎实的数学和物理基础, 擅长 C++和 Python 语言的算法和软件开发
熟练应用光学(Optical)，雷达(Radar)和激光雷达(LiDAR)等遥感图像进行信息提取；分析区域到全球范围的土地覆盖变化；评估和预测城市扩展趋势

五、主要研究方向和研究内容

一直同时从事遥感数据处理方法开发和实际应用双方面的研究。

算法开发：机器学习算法开发（神经网络，子空间算法，粗糙集，深度学习）；遥感图像分类及变化检测算法(遥感数据包括航空图像，光学图像，合成孔径雷达图像，UVA 无人机图像)；遥感图像融合算法；局部气候分区(LCZ)分类方法；基于格网的城市扩展分析方法；融合光学和雷达数据识别和提取地表面的信息；基于 LiDAR 点数据和高分辨率航拍影像的城市三维结构的提取等。

应用研究：基于局部气候分区(LCZ)的城市热岛强度研究；提取高精度的城市三维立体结构；城市扩展分析以及基于 LiDAR 点数据，高分辨率航拍影像和航拍的地表面的热辐射信息的城市内部结构的分析；预测未来的不同城市发展模式对城市的能量消耗，城市热岛效应及二氧化碳排放的影响；世界各大城市的时间序列和城市扩展分析；内蒙古地区土地覆被土地利用和变化分析等。

六、学术论文

在“*Remote Sensing of Environment*”、“*IEEE Transactions on Geoscience and Remote Sensing*”、“*PE&RS*” 等遥感领域的国际权威期刊，“*Land Degradation & Development*”、“*Environment and Planning B*”和“*Environmental Research Letters*” 等环境方面的国际权威期刊，以及在《中国科学》，《中国图象图形学报》等国内外核心刊物上以第一作者发表多篇论文。以第一作者身份撰写国际同行评审的遥感权威教科书《*Remote Sensing Handbook*》的第 24 章(出版社：*Taylor and Francis*；主编：Dr. Prasad S. Thenkabail)。论文受到世界银行的高度评价，研究成果以图表的形式被采用于世界银行（*World Bank*）的 2021 年 3 月出版的报告书“*RICH Food, Smart City*”之中。

国际期刊 (*通讯作者)

1 Chaomin Chen, **Hasi Bagan***, Takahiro Yoshida, Habura Borjigin, Jun Gao. "Quantitative analysis of the building-level relationships between building morphology and land surface temperature using airborne LiDAR and thermal infrared data", *Urban Climate*, 2022, 45. DOI: https://doi.org/10.1016/j.uclim.2022.101248. (SSCI/ SCI).

2 Yoshie Ishii, **Hasi Bagan**, Koki Iwao, Tsuguki Kinoshita*. "A new land cover classification method using grade-added rough sets," *IEEE Geoscience and Remote Sensing Letters*, 2021, 18(1): 8-12. DOI: 10.1109/LGRS.2020.2965297. (SCI).

3 Chaomin Chen, **Hasi Bagan***, Xuan Xie, Yune La, Yoshiki Yamagata. "Combination of Sentinel-2 and PALSAR-2 for Local Climate Zone Classification: A Case Study of Nanchang, China," *Remote Sensing*, 2021, 13(10), 1902. https://doi.org/10.3390/rs13101902. (SCI).

4 **Hasi Bagan***, Andrew Millington, Wataru Takeuchi, Yoshiki Yamagata. "Spatiotemporal analysis of deforestation in the Chapare region of Bolivia using LANDSAT images," *Land Degradation & Development*, 2020, 31(18): 3024-3039. DOI: https://doi.org/10.1002/ldr.3692. (SCI).

5 Yune La, **Hasi Bagan***, Yoshiki Yamagata. "Urban land cover mapping under the Local Climate Zone scheme using Sentinel-2 and PALSAR-2 data," *Urban Climate*, 2020, 33. DOI: https://doi.org/10.1016/j.uclim.2020.100661. (SSCI/ SCI)

6 **Hasi Bagan***, Habura Borjigin, and Yoshiki Yamagata. "Assessing nighttime lights for mapping the urban areas of 50 cities across the globe," *Environment and Planning B: Urban Analytics and City Science*, 2019, 46(6), 1097-1114. DOI: https://doi.org/10.1177/2399808317752926. (SSCI).

7 Temulun Tangud*, Kenlo Nishida Nasahara, Habura Borjigin, **Hasi Bagan.** "Land-cover change in the Wulagai grassland, Inner Mongolia of China between 1986 and 2014 analysed using multi-temporal Landsat images," *Geocarto International*, 2019, 34(11), 1237-1251. DOI: https://doi.org/10.1080/10106049.2018.1478457. (SCI).

8 Zhaoling Li, **Hasi Bagan***, Yoshiki Yamagata. "Analysis of spatiotemporal land cover changes in Inner Mongolia using self-organizing map neural network and grid cells method," *Science of the Total Environment*, 2018, 636: 1180-1191. DOI: https://doi.org/10.1016/j.scitotenv.2018.04.361. (SCI).

9 **Hasi Bagan***, Huilong Li, Yonghui Yang, Wataru Takeuchi, Yoshiki Yamagata. "The sensitivity of subspace method for land cover classification," *The Egyptian Journal of Remote Sensing and Space Sciences*, 2018, 21(3): 383-389. DOI: https://doi.org/10.1016/j.ejrs.2017.12.003. (ESCI).

10 Abdul Aziz Mohibbi, **Hasi Bagan**, Motoko Inatomi, Tsuguki Kinoshita*. "Land Cover Change in Bamyan, Afghanistan from 1990 to 2015: land degradation induced by lack of land management," *Japanese Journal of Farm Work Research*, 2018, 53(1): 15-32. DOI: 10.4035/jsfwr.53.15

11 **Hasi Bagan***, Ram Avtar, Hajime Seya, Huade Guan. "Mathematics in utilizing remote sensing data for investigating and modelling environmental problems," *Mathematical Problems in Engineering*, 2017, 7430658, DOI: https://doi.org/10.1155/2017/7430658. (SCI).

12 **Hasi Bagan***, Yoshiki Yamagata, "Analysis of urban growth and estimating population density using satellite images of nighttime lights and land-use and population data," *GIScience & Remote Sensing*, 2015, 52(6): 765-780. DOI: https://doi.org/10.1080/15481603.2015.1072400. (SCI).

13 **Hasi Bagan***, Yoshiki Yamagata, "Land-cover change analysis in 50 global cities by using a combination of Landsat data and analysis of grid cell," *Environmental Research Letters*, 2014, 9(6): 064015. doi:10.1088/1748-9326/9/6/064015. (SCI).

14 Tana Qian, **Hasi Bagan***, Tsuguki Kinoshita, Yoshiki Yamagata, "Spatial–temporal analyses of surface coal mining dominated land degradation in Holingol, Inner Mongolia," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 2014, 7(5): 1675-1687. DOI: 10.1109/JSTARS.2014.2301152 (SCI).

15 Masato Hayashi*, Yoshiki Yamagata, Habura Borjigin, **Hasi Bagan**, Rikie Suzuki, and Nobuko Saigusa, "Forest biomass mapping with airborne LiDAR in Yokohama City, Japan," *Journal of the Japan Society of Photogrammetry and Remote Sensing*, 2013, 52(6): 306-315. DOI: 10.4287/jsprs.52.306

16 **Hasi Bagan***, Yoshiki Yamagata, “Landsat analysis of urban growth: How Tokyo became the world’s largest megacity during the last 40 years,” *Remote Sensing of Environment*, 2012, 127: 210–222. DOI: https://doi.org/10.1016/j.rse.2012.09.011. (SCI).

17 **Hasi Bagan***, Tsuguki Kinoshita, Yoshiki Yamagata, “Combination of AVNIR-2, PALSAR, and Polarimetric Parameters for Land Cover Classification,” *IEEE Transactions on Geoscience and Remote Sensing*, 2012, 50(4): 1318–1328. DOI: https://doi.org/10.1109/TGRS.2011.2164806. (SCI).

18 **Hasi Bagan***, Yoshiki Yamagata, “Improved subspace classification method for multispectral remote sensing image classification,” ***Photogrammetric Engineering and Remote Sensing (PE&RS)***, 2010, 7611): 1239-1251. DOI: https://doi.org/10.14358/PERS.76.11.1239. (SCI).

19 **Hasi Bagan***, Wataru Takeuchi, Tsuguki Kinoshita, Yuhai Bao, Yoshiki Yamagata. “Land cover classification and change analysis in the Horqin sandy land from 1975 to 2007,” ***IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, 2010, 3(2): 168-177. DOI: https://doi.org/10.1109/JSTARS.2010.2046627. (SCI).

20 **Hasi Bagan***, Wataru Takeuchi, Yoshiki Yamagata, Xiaohui Wang, Yoshifumi Yasuoka. “Extended Averaged Learning Subspace Method for Hyperspectral Data Classification,” *Sensors*, 2009, 9(6): 4247-4270. DOI: 10.3390/s90604247 (SCI).

21 Yoshiki Yamagata*, Wataru Takeuchi, **Hasi Bagan**, Akihiko Ito, Minaco Adachi, “Forest carbon mapping using remotely sensed disturbance history in Borneo,” *IEEE Earthzine*, Sep.21, 2010.

22 **Hasi Bagan***, Yoshifumi Yasuoka, Takahiro Endo, Xiaohui Wang, Zhaosheng Feng, “Classification of Airborne Hyperspectral Data Based on the Average Learning Subspace Method,” *IEEE Geoscience and Remote Sensing Letters*, 2008, 5(3): 368-372. DOI: 10.1109/LGRS.2008.915941 (SCI).

23 **Hasi Bagan**, Qinxue Wang*, Masataka Watanabe, Satoshi Kameyama, Yuhai Bao, “Land-cover Classification Using ASTER Multi-band Combinations Based on Wavelet Fusion and SOM Neural Network,” *Photogrammetric Engineering and Remote Sensing* (*PE&RS*), 2008, 74(3): 333-342. DOI: https://doi.org/10.14358/PERS.74.3.333. (SCI).

24 **Hasi Bagan***, Qinxue Wang, Yonghui Yang, Yoshifumi Yasuoka, Yuhai Bao, “Land cover classification using moderate resolution imaging spectrometer-enhanced vegetation index time-series data and self-organizing map neural network in Inner Mongolia, China,” *Journal of Applied Remote Sensing*, 2007, 1, 013545. DOI: https://doi.org/10.1117/1.2819344 (SCI).

25 **Hasi Bagan***, Qinxue Wang, Yoshifumi Yasuoka, Masataka Watanabe, “Synergetic use of MODIS, ASTER and Landsat data for land cover classification and its calibration in north China,” *Asian Journal of Geoinformatics*, 2007, 7(3): 15-20.

26 **Hasi Bagan***, Qinxue Wang, Masataka Watanabe, Yonghui Yang, Jianwen Ma, “Land cover classification from MODIS EVI times-series data using SOM neural network,” *International Journal of Remote Sensing*, 2005, 26(22): 4999-5012. DOI: https://doi.org/10.1080/01431160500206650 (SCI).

27 **Hasi Bagan***, Ma Jianwen, Li Qiqing, Chen Xue, Dai Qin, “Remote Sensing Data Classification Based on Tolerant Rough Set and Neural Network,” *Science in China Series D - Earth Science*, 2004, 34(10): 967-974. (Chinese version)

Jianwen Ma, **Hasi Bagan**, “Remote Sensing Data Classification Based on Tolerant Rough Set and Neural Network,” *Science in China Series D: Earth Sciences* , 2005, 48(12): 2251-2259. DOI: 10.1360/03yd0514 (SCI).

28 **Hasi Bagan***, Ma Jianwen, Li Qiqing, Han Xiuzhen, Liu Zhili, “Self-organizing feature map neural network classification of the ASTER data based on wavelet fusion,” *Science in China Series D: Earth Sciences*, 2004, 47(7): 651 – 658. DOI: 10.1360/03yd0411 (SCI).

29 Jianwen Ma*, **Hasi Bagan**, “Land-use classification using ASTER data and self-organized neutral networks,” *International Journal of Applied Earth Observation and Geoinformation*, 2005, 7(3): 183-188. DOI: https://doi.org/10.1016/j.jag.2005.01.003 (SCI).

30 Jianwen Ma *, Han Xiuzhen, **Hasibagan**, Wang CL, Zhang YL, Tang JY, Xie ZY, Deveson TMonitoring, “Monitoring East Asian migratory locust plagues using remote sensing data and field

investigations," *International Journal of Remote Sensing*, 2005, 26(3): 629-634. DOI: https://doi.org/10.1080/01431160310001595019 (SCI).

日文核心期刊

31 哈斯巴干."新型コロナ禍における中国上海の大学対応状況について", 写真測量とリモートセンシング, 2021,60(4):217~220.

32 Wudabalaqiqige*, Tetsuji Ito, **Hasi Bagan**, Yuji Kuwahara, "Analysis of Natural and Social Environment Issue in Arhorchin Banner, Inner Mongolia," *Journal of applied survey technology*, 2016, 27: 131-142. (Wudabalaqiqige、伊藤 哲司、**Hasi Bagan**、桑原 祐史."内モンゴルアルホルチン旗を対象とした自然・社会環境問題の分析", 応用測量論文集, 第 27 巻, 131-142, 2016).

中文期刊

33 陈曦，陈超民，哈斯巴干*，吉田崇紘. "城市内部结构和人口密度对地表温度空间变化的影响—以东京新宿区为例"， 红外，2022, 43(7): 34-40. Doi: 10.3969/j.issn.1672-8785.2022.07.006

34 谭路文，哈斯巴干*，陈超民，谢璇. "基于深度学习的无人机遥感影像车辆检测"， 红外，2022, 43(5): 41-48. Doi: 10.3969/j.issn.1672-8785.2022.05.007

35 谢璇，陈超民，杜云，哈斯巴干*."基于局部气候分区的土地覆被变化时空分析", 红外，2021,42(6):34~44. Doi: 10.3969/j.issn.1672-8785.2021.06.007

36 杜云，喇赟娥，哈斯巴干*."基于 Landsat 数据的科尔沁沙地土地覆被变化分析", 红外，2020,41(6):30~41. Doi: 10.3969/j.issn.1672-8785.2020.06.005

37 戴芹, 马建文, 欧阳赟, 哈斯巴干."利用贝叶斯网络进行遥感变化检测",中国图象图形学报，2005, 10(6): 41-45.

38 哈斯巴干，马建文，李启青，陈雪，戴芹，"容差粗糙集与神经网络结合的遥感数据分类方法"，中国科学 (D 辑:地球科学)，2004, 34(10): 967 - 974.

39 哈斯巴干，马建文，李启青."模糊 c-均值算法改进及其对卫星遥感数据聚类的对比研究", 计算机工程，2004, 30(11): 14 - 15.

40 哈斯巴干，马建文，韩秀珍等."多波段遥感数据的神经网络降维分类研究", 武汉大学学报. 信息科学版，2004, 29(5): 461 - 465.

41 李启青, 马建文, 哈斯巴干, 韩秀珍, 刘志丽."基于遥感数据特征和像元替换技术的边缘提取方法"，计算机工程，2004, 30(8): 151-152.

42 马建文, 韩秀珍, 哈斯巴干, 王志刚 ,燕守勋, 戴芹."基于东亚飞蝗生育周期的遥感蝗灾监测新模式"，遥感学报， 2004, 8(4): 370-377.

43 刘志丽, 马建文 ,张仁健, 王志刚, 哈斯巴干, 李启青."利用遥感综合分析西风引导气流与地形对沙尘运移路径的影响"，中国沙漠， 2004, 24(3): 330-334.

44 哈斯巴干,马建文,李启青,韩秀珍,刘志丽,"基于小波融合的 ASTER 数据自组织特征映射神经网络分类研究"，中国科学 (D 辑:地球科学), 2003, 33(9): 895-902.

45 哈斯巴干，马建文，周其江等."基于气象数据与 AVHRR 热红外数据的人工神经网络分类方法研究"，中国科学院研究生院学报，2003, 20(3): 328-333.

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47 李启青，马建文，哈斯巴干等."一种可扩展四叉树结构及其先序遍历算法"，计算机工程与应用，2003, 28: 22-24.

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49 李启青，马建文，哈斯巴干等."遥感数据的遗传超平面算法"，遥感学报，2003, 7: 485 – 489.

50 马建文，韩秀珍，哈斯巴干等."东亚飞蝗灾害的遥感监测实验"，国土资源遥感, 2003, 55(1): 51-55.

51 李启青, 马建文, 哈斯巴干, 刘志丽, 韩秀珍."基于遥感数据光谱和空间特征的边缘提取方法"，

计算机应用， 2003, 23(9): 53-55.

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论著

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国际学术期刊编委

2021 Remote Sensing (SCI); Guest Editor
2019 Sustainability (SCI/SSCI); Lead Guest Editor

奖励和荣誉

A) 2013 Mawson Lakes Foundation Fellowship, *Australia*
B) 2006 The Best Poster Presentation Award, *the 27th Asian Conference on Remote Sensing*
C) 2006 Grant-In-Aid for Scientific Research, *Japan Society for the Promotion of Science*

所属学会

1) 上海市红外与遥感学会 理事
2) IEEE Geoscience and Remote Sensing Society
3) Japan Society of Photogrammetry and Remote Sensing
4) Remote Sensing Society of Japan
5) American Geophysical Union

科研基金评审

1) 中国国家自然科学基金面上项目 评审专家
2) 比利时 Belgian Earth Observation Research Programmee (STERO II proposal) 评审专家

成果应用

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3) Asian Journal of Geoinformatics
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