XIANG ZHAO

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Early-career GIS and remote-sensing specialist with strong Python and R skills in geospatial analysis, automation, and environmental modelling. Experienced working with satellite and UAV datasets, conducting ecological field surveys, and building reproducible mapping workflows. Skilled in ArcGIS Pro, QGIS, and geospatial data pipelines, with additional experience developing ML/AI image-classification tools. A collaborative problem-solver with a track record of delivering high-impact spatial products for research and applied environmental projects.

EDUCATION

06/2021 – 04/2024	**Master by Research (Conservation Science)**
	School of Biology and Environmental Science, Queensland University of Technology, Brisbane, Australia
Thesis Title	Optimal biodiversity survey: where to survey biodiversity in terrestrial Antarctica.
Supervisors	Prof. Kerrie Wilson and Prof. Michael Bode
Description	Using large spatial and biodiversity datasets, I employed spatial mapping, modelling, statistics, and optimization algorithms to study the historical biodiversity survey pattern in terrestrial Antarctica and proposed an optimal survey design for future survey. Read thesis via: https://eprints.qut.edu.au/247980/
07/2013 - 07/2017	**Bachelor of Engineering (Environmental Engineering)**
	School of Environment, Dalian University of Technology, Dalian, China
	Environmental Engineering, top 15%, GPA 84.6/100
Thesis Title	Copper-based Catalysts for Selective Catalytic Oxidation of Ammonia
Supervisors	Prof. Zhenjiang Qu and Dr. Hui Wang
Description	My thesis project involved experiments on developing copper-based catalysts used to catalyze the conversion of ammonia into nitrogen and water.

SKILLS & COMPETENCIES

- **Geospatial analysis & mapping** – Proficient in spatial data processing and visualization using R (sf, terra, tmap, leaflet), Python, and ArcGIS Pro, and QGIS.
- **Biodiversity & spatial data management** – Extensive experience handling large ecological datasets, remote sensing (satellite and UAV) data for species and environmental analysis
- **Spatial and ecological modelling** – Skilled in statistical modelling, including GLMs, Random Forests, Sptial Block Cross-validation, Spatial prioritization and resampling techniques using R, Python and MATLAB.
- **ML/AL Computer vision modelling** – Experienced in processing large volumes of raw camera-trap imagery and developing species-detection machine-learning models (Yolo, Megadetector and SpeciesNet) using Python and Azure.
- **Version control & collaboration** – Advanced user of Git for professional workflows on GitHub and GitLab (including branching, pull requests, CI).
- **Fieldwork & stakeholder engagement** – Conducted household surveys, biodiversity field sampling, and liaised with diverse community stakeholders
- **Environmental monitoring experience** – Applied experience in water, air, noise, and chemical quality monitoring techniques
- **Project management & education** – Led scientific projects and contributed to teaching and learning design in academic and applied settings
- **Languages** – Native Mandarin speaker; fluent in professional English (written and spoken)

PROFESSIONAL EXPERIENCE

06/24 – Present	**Conservation Scientist & Software developer (R Specialist) EcoCommons Position, Queensland Cyber Infrastructure Foundation Ltd**
Responsibilities	Xiang Zhao is responsible for developing and maintaining the EcoCommons R package and platform—Australia's national ecological and species distribution modelling platform—ensuring accurate visual and statistical outputs, and collaborating with ecologists to support evidence-based conservation. He builds species distribution and detection models using spatial, ecological, and statistical methods, including projects with eBird, BirdLife Australia, NSW DPE, and the Queensland Herbarium to support conservation planning for threatened species such as the Eastern Bristlebird and Nangur spiny skink. Xiang also creates tutorials and modelling workflows, and delivers workshops and presentations (e.g. at ICCB 2025) to support the broader ecological research community.
02/24 – 05/24	**Contractor, Natural Capital Project, Bush Heritage Australia**
Responsibilities	I build training data for a drone-images processing model which is applied to access the health of private land. I write R script and use ArcGIS Pro to atomize all possible repeating procedures.
02/24 – 06/24	**Research assistant for Prof. Michael Bode, Queensland University of Technology**

Responsibilities I was in charge of building a dataset including information of a series of Sustainable Development Goals interventions for all countries in the world.

01/23 – 06/24 **Tutor, EVB203 Geospatial Information Systems, Queensland University of Technology**

Responsibilities I helped with course content design and development, for example, I have made some video tutorials, R coding and ArcGIS Pro mapping tutorial materials. I also have led some tutorials with other tutors.

07/23 – 10/23 & 07/24 – 10/24 **Tutor, UXH331 Environmental Planning, Queensland University of Technology**

Responsibilities I designed and delivered a series of ten GIS workshops for the unit, focusing on practical skills in ArcGIS Pro. In recognition of this contribution to teaching, I received the 2024 QUT Vice Chancellor's Award for Excellence.

08/19 – 06/21 **Backpacker in Australia**

Responsibilities Travelled, worked, and volunteered in Western Australia, Tasmania, Victoria, and Queensland

I won the "Best Staff of the Month" during my employment with the Esplanade Hotel, Port Headland, WA

01/18 - 05/19 **Department assistant – Department of Executive Education and Government Training, Duke Kunshan University, China**

Responsibilities In this position, I had two roles. One role was independently coordinating environmental protection training programs for NGOs, companies, and governments. Another role was supporting business non-degree executive education programs. In this position, I had:

- coordinated environmental protection training programs, including:
  - Blue Pioneer Program (2018), a marine NGO practitioners training program funded by the David and Lucile Packard Foundation (the U.S.), the Paradise Foundation and the Yintai Foundation (China). Trainees and the academic supervisor of this program were received by the King and Queen of Norway in October 2018 in Shanghai.
  - The Energy Observer Youth Field Trip Program funded by a China Southern Power Grid Company Limited
- coordinated training programs under cooperation with the national and local level governments, including:
  - The sustainable development of western China under the One Belt and One Road context workshop, held by the National Development and Reform Commission of China and DKU.
- supported executive education programs, worked with customers from Boeing, Roche, and Shenzhen Airport etc.
- worked with stakeholders from academics, NGOs, and private sectors.
- recruited, trained, and supervised more than 10 interns.
- managed budgets and expenses for multiple projects.

I was also on several committees for organizing university-wide events, including international student campus day, student recruitments, and some international conferences, etc.

06/2017 - 09/2017 **Intern - Master of Environmental Policy Program, Duke Kunshan University, China**

Responsibilities During my internship, I independently designed and coordinated a two-week summer boot camp for recruiting purposes which received hundreds of applications. And I also supported a governmental forum and several training programs.

RESEARCH EXPERIENCE

2021 **Research Assistant – Dr. Kathinka Fürst**

Responsibilities I drafted a 34-page marine NGO capacity-building initiative proposal. This proposed project aims at building a regional platform to accelerate the career development of young leaders from local marine NGOs in China, India, and ASEAN countries.

12/2017 - 12/2019 **Team member – Overgrazing Livestock Problem in Panda Habitats Research Team (Four people)**

Biodiversity and Sustainability Lab, Duke Kunshan University, China

Responsibilities This project includes one-year fieldwork and one-year desk work (data analysis and journal paper writing). We looked at the overgrazing livestock problem in Panda habitats located in Southwestern China. We worked with the local community and conducted household surveys to understand the history, future, and drivers of this problem. My responsibilities included:

- writing project proposal for funding application
- managing finance and liability of the project's funding
- fieldwork planning and data collection, community survey design and digitalization, and volunteer team management.
- analyzing data and writing a journal paper

10/2017 **Intern - School of Environment, Tsinghua University, Shijiazhuang**

Responsibilities The project I worked on was "PM 2.5 sources census in Hebei Province". My responsibilities included:

- working with researchers from Tsinghua University, Nankai University, and government servants of Shijiazhuang Environmental Protection Bureau to build a census system of PM 2.5 sources in Shijiazhuang city
- providing technical support to two counties of Shijiazhuang city to complete the census.

2014 - 2016 **Research Assistant – Key Laboratory of Industrial Ecology and Environmental Engineering, Dalian**

Responsibilities In this three-year lab work, I studied the performance of copper-based catalysts in the selective catalytic oxidation of ammonia. This study aims at using cheap metal (base metal) to make catalysts to eliminate ammonia in industrial gas emissions. My graduation thesis for my bachelor's degree was developed from this work.

01/2017 - 03/2017 **Research Intern - The Nature Conservancy, Beijing**

Responsibilities The project I worked on was "River Health". This project aims at introducing and building a river health assessment system to evaluate the ecosystem health of two main rivers in China. My responsibilities have included:

- analyzing China's policies for the retirement of small hydroelectric power plants.
- collecting and analyzing worldwide good practices of river health assessment and drafting a 20,000-word report.
- organizing a team to translate a 12,000-word project proposal from Chinese to English.

GRANTS & AWARDS

06/2024 **2024 QUT Vice Chancellor's Award for Excellence, the Queensland University of Technology, Australia**

06/2021 – 09/2023 **QUT Postgraduates Research Award Scholarship and QUT HDR Tuition Fee Sponsorship, the Queensland University of Technology, Australia**

07/2019 **USD 1,475 (2,000 AUD), Travel Grant from the Aage V. Jensen Charity Foundation and Conservation Leadership Program of Birdlife International, UK**

I have received this travel grant to attend the 29th International Congress for Conservation Biology in Malaysia.

2018 **£10,000 (17,570 AUD), Young Conservation Leadership Award 2018, Birdlife International, UK**

Our four-people team and our "Protect giant panda habitat from overgrazing in Pingwu County, China" was selected as one of the ten projects in 2018 globally.

2014 - 2016 **RMB 10,000 (2,000 AUD), National Innovation and Entrepreneurship Training Program, China**

I have received this grant to support my research on the copper-based catalyst.

05/2016 **Academic Visiting - The University of Kitakyushu, Japan**

I visited the University of Kitakyushu and gave a talk on using copper-based catalysts to deal with industrial waste gas pollution.