XIAO PING SONG, PhD

Hands-on technical leader with expertise in data engineering, analytics, and geographical information systems (GIS). Comfortable in ambiguous, high-stakes environments — aligning stakeholders with competing priorities and leading teams to deliver with speed and clarity. I care deeply about team culture, transparency, and building systems that last.

Certified PMP, ITIL, and AWS Solutions Architect. In academia, I worked as a Postdoctoral Fellow leading research and teaching in applied machine learning and geospatial programming.

💼 EMPLOYMENT

2025

Data Engineering Manager
Esri Singapore

- Spearhead data-driven performance framework with peer feedback to foster a transparent culture and align incentives with company values
- Pioneer strategic AI adoption by gaining executive buy-in and driving governance through tool integration, agent configuration, and rule files

2024

Senior Data Engineer, Technical Lead
Esri Singapore, Professional Services

- Awarded company-wide 'Most Valuable Player - Leadership Award'
- Managed technical rollout of 100+ web widgets, 1,000+ geo-data layers and 300+ API endpoints to 1,200 users and 9 external systems, with all phases delivered on schedule
- Spearheaded cross-team initiatives and client negotiations, introducing change controls that reduced project scope by 3000+ development hours
- Developed tools and scripts for data migration and end-to-end validation, achieving 100% sign-off on accuracy and completeness

2021 | 2023

Postdoctoral Fellow, Project Manager, Adjunct Lecturer
NUS College of Design and Engineering

- Secured 3-year grant for $1.5 mil
- Assembled and managed a diverse, cross-organisational team to develop sustainability reporting standards across six work streams
- Led deployment of IoT sensor networks, delivering real-time data with 60% cost savings by refining requirements and adopting specific wireless technologies

2020 | 2022

Postdoctoral Fellow, Project & Product Manager
National University of Singapore, Faculty of Science

- Led the delivery of a data product that provides biodiversity performance benchmarks, gaining buy-in from senior management
- Developed data pipelines and predictive models to assess the spatial distribution of 1,100 species
- Secured access to sensitive high-resolution (LiDAR) data and $60,000 for satellite images
- Led and trained a team of five to proficiency in coding best practices and GitHub collaboration, leading to model training at 8x speed

2016 | 2020

PhD Researcher
ETH Zürich, SEC, Future Cities Laboratory

- Drove initiatives for industry collaboration, presented at conferences (UK, US, Switzerland, Japan), and published four research papers in leading global journals

CONTACT

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</> CODE & TOOLS

Python / R / SQL / Git
Azure DevOps / AWS / Google Cloud
Jira / Confluence / Automation
ArcGIS Pro / Enterprise / Online
QGIS / Google Earth Engine
Docker
CLI / Bash / Powershell
Terraform
dbt (Data Build Tool)
APIs (REST, GraphQL)

📈 DOMAINS & METHODS

Data, software & cloud migration
Data architecture / modeling
Data visualization / dashboards
Geographic Information Systems
Remote sensing (satellite / LiDAR)
Image processing (inc. spectral)
IoT / Wireless technologies
Utility networks (e.g., water)
Metrics & feature engineering
Model diagnostics & debugging
Linear & mixed models
Decision trees / Ensemble models
Unsupervised learning
Curriculum development
Resource & capacity planning
Scrum / Agile transformation

🎓 EDUCATION

2020

● **Ph.D. in Architecture (Urban Planning / Analytics)**
National University of Singapore, College of Design and Engineering

- Applied statistical/ML techniques to develop a cost-effective strategy for managing trees citywide
- Predicted recreational preferences and crowd behaviour at parks based on social media photos

2016

● **B.Sc. (Hons) in Life Sciences,**
Minor in Technology Entrepreneurship
National University of Singapore

🖥 TEACHING / TRAINING SKILLS

2023

● **Geospatial Data Science with R**
Udemy online course
🔗 bit.ly/geospatial-datascience-r_udemy

2023

● **Geodesign**
Module Lecturer, National University of Singapore. Master / Bachelor of Landscape Architecture

2021
|
2022

● **Introduction to Git**
University workshops on version control and GitHub collaboration

2018
|
2022

● **Introduction to R Programming and Spatial Statistics**
Online and in-person workshops covering a variety of topics in R
🔗 xpsong.com/posts/intro2r
🔗 xpsong.com/posts/intro2r-spatial

2016
|
2020

● **Weekly Music Classes**
Part-time Educator, My Drum School Pte Ltd. Attained Net Promoter Score of 75 (top 5%); Best Educator of the Quarter twice in 3 years
🔗 instagram.com/p/BzpCir0HQA-

🎖 ACCOMPLISHMENTS

● **Certifications**
- ITIL® 4 Foundation (PeopleCert)
- AWS Certified Solutions Architect (AWS)
- Project Management Professional (Project Management Institute)
- Data Engineering Professional Certificate (DeepLearning.AI, AWS)
- MLOps Specialization (DeepLearning.AI)
- Deep Learning Specialization (DeepLearning.AI)
- Machine Learning Specialization (Stanford University)

● **Awards**
- SEC PhD Scholarship (Fully Funded), National Research Foundation (2016)
- Best Full-time National Serviceman, Officer Cadet School (Midshipmen Wing), Singapore Armed Forces (2011)
- Jacob Ballas Scholar's Award, Perfect score (six distinctions) for GCE 'A' Level Examinations (2009)

📦 SOFTWARE

📦 **biodivercity**
Assess the spatial distribution of urban biodiversity between places, across time, and into the future

📦 **home2park**
Assess the spatial provision of parks city-wide