

# 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 to develop data products and metrics for city planning and sustainability reporting. Research and teaching experience in applied machine learning and geospatial programming.

## EMPLOYMENT

- 2025 • **Data Engineering Manager**  
Esri Singapore
- 2024 • **Senior Data Engineer, Technical Lead**  
Esri Singapore, Professional Services
  - Awarded company-wide 'Most Valuable Player (MVP) - Leadership Award'
  - Spearheaded cross-team initiatives and client negotiations, introducing change controls that reduced project scope by 3000+ development hours
  - Managed team of 12 to complete data migration milestone, enabling resource reallocation to accelerate project-wide progress
  - Developed tools and scripts for data migration and end-to-end validation, achieving 100% sign-off on accuracy and completeness
- 2021  
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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  
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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  
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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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🔗 [scholar.google.com](https://scholar.google.com)

👤 [udemy.com/user/xp-song](https://udemy.com/user/xp-song)

## </> CODE & TOOLS

Python / R / SQL / Git  
Azure DevOps / AWS / Google Cloud  
Jira / Workflows / 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  
Capacity / Curriculum development  
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](https://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](https://xpsong.com/posts/intro2r)  
[@ xpsong.com/posts/intro2r-spatial](https://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-](https://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

-  [biodiversitycity](#)  
Assess the spatial distribution of urban biodiversity between places, across time, and into the future
-  [home2park](#)  
Assess the spatial provision of parks city-wide

Generated using the R package  
[pagedown](#)

Last updated: Jul 04, 2025