

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. Experience across Gov, Defense, Homeland, Utilities, and Sustainability. In academia, I worked as a Postdoctoral Fellow leading research and teaching in 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 and agent configuration
- Scope POCs/proposals and build internal tools to strengthen the delivery pipeline
- Drive process unification with a new onboarding framework and playbooks to scale the delivery of repeatable solutions

2024

- **Senior Data Engineer, Technical Lead**

Esri Singapore, Professional Services

- Awarded company-wide 'Most Valuable Player - Leadership'
- Managed technical rollout of 1000+ web widgets, geo-data layers and API endpoints to 1,200 users and 9 external systems, with all phases delivered on schedule
- Forward-deployed development for data migration, achieving 100% validation and sign-off
- Spearheaded cross-team initiatives and client negotiations, introducing change controls that reduced scope by 3000+ development hours

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 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 for biodiversity performance benchmarking, gaining buy-in from senior management
- Developed data pipelines and models to predict the spatial distribution of 1,100 species
- Secured access to sensitive high-res LiDAR and \$60,000 for satellite images

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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- github github.com/xp-song
- scholar scholar.google.com
- udemy udemy.com/user/xp-song

</> CODE & TOOLS

- Python / R / SQL / Git
- Cursor AI / MCPs
- 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)

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