

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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 xpsong.com

 linkedin.com/in/xpsong

 github.com/xp-song

 scholar.google.com

 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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