XIAO PING SONG, PhD

Hands-on technical leader with expertise in data engineering, AI/ML, 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 government, defense, homeland, utilities, and sustainability verticals. 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 (Boustead Group)

- Pioneer strategic AI adoption by gaining executive buy-in and driving governance through tool integration and agent configuration
- Drive process unification with a new onboarding framework and playbooks to scale the delivery of repeatable solutions
- Spearhead data-driven performance framework with peer feedback to foster a transparent culture and align incentives with company values
- Scope POCs/proposals and build internal tools to strengthen the delivery pipeline

2024

Senior Data Engineer, Tech Lead
Esri Singapore, Professional Services (Delivery)

- 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
- Led client workshops to uncover core needs, delivering solutions that significantly reduced task complexity and duration
- Spearheaded cross-team initiatives and client negotiations, introducing change controls that reduced scope by 375 man-days

2021 | 2023

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

- Secured 3-year grant for $1.5 mil
- Assembled 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 | 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
- Secured access to sensitive high-res LiDAR and $60k for satellite images

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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- scholar.google.com
- Ʊ 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
GenAI / LLMs
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 (600+ learners; rated 4.7 / 5)
🔗 bit.ly/geospatial-datascience-r_udemy

2023
● **Geodesign**
Module Lecturer, National University of Singapore. Master / Bachelor of Landscape Architecture

**2018
|
2022**
● **Coding workshops: Spatial Statistics and Version Control**
Online and in-person workshops on R programming and Git
🔗 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**
- Most Valuable Player - Leadership, Esri Singapore (2024)
- SEC PhD Scholarship, 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)