

XIAO PING SONG, PhD


A decade of experience in data science and 3 years leading end-to-end delivery for technical projects. Currently working on software and data engineering across on-premise and cloud platforms. Research and teaching expertise in applied machine learning and geospatial techniques. Certified PMP, ITIL, and AWS Solutions Architect.

My track record includes driving productivity gains by transforming team culture, fostering accountability with transparent reporting, and aligning diverse stakeholders in highly matrixed environments.

EMPLOYMENT

- 2024

- Senior Data Engineer, Technical & Team Lead**
Esri Singapore  Singapore
 - Managed a team of 12 to complete data migration milestone, enabling resource reallocation to accelerate project-wide progress
 - Spearheaded cross-team initiatives and client negotiations, introducing change controls that reduced project scope by 3000+ development hours
 - Drove operational efficiency by overhauling team structure, communication channels and scrum ceremonies, eliminating 12+ hours of meetings per month
 - Developed tools and scripts for data migration and end-to-end validation, achieving 100% sign-off on accuracy and completeness
 - Conducted user workshops and UAT to uncover core needs, delivering geo-processing solutions that significantly reduced task complexity and duration
- 2021
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2023

- Postdoctoral Fellow, Project Manager, Adjunct Lecturer**
National University of Singapore, Dept. Architecture  Singapore
 - Secured 3-year grant for \$1.5 mil
 - Led deployment of IoT sensor networks, delivering real-time data with 60% cost savings by refining requirements and adopting specific wireless technologies
 - Assembled and managed a diverse, cross-organisational team to develop sustainability reporting standards across six work streams
 - Pioneered new methods to reduce spatial disparities in park access, published in a software journal
- 2020
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2022

- Postdoctoral Fellow, Project & Product Manager**
National University of Singapore, Faculty of Science  Singapore
 - 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  Singapore, Switzerland
 - Drove initiatives for industry collaboration, presented at conferences (UK, US, Switzerland, Japan), and published four research papers in leading global journals

CONTACT

 xpsong.connect@gmail.com

 xpsong.com

 linkedin.com/in/xpsong

 github.com/xp-song

 scholar.google.com

 udemy.com/user/xp-song

CODE & TOOLS

Python / PyTorch / Tensorflow
R / tidyverse / r-spatial / Shiny
SQL / PostgreSQL / PostGIS
Azure DevOps / AWS / Google Cloud
Jira / Workflows / Automation
ArcGIS Pro / Enterprise / Online
QGIS / Google Earth Engine
Docker
Git
CLI / Bash / Powershell
HTML / CSS
APIs (REST, GraphQL)
Regex

DOMAINS & METHODS

Data, software & cloud migration
Data visualization / dashboards
Spatial data manipulation / modelling
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
Parallel programming
User acceptance testing
Questionnaire surveys

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](#))
 - MLOps Specialization ([DeepLearning.AI](#))
 - Deep Learning Specialization ([DeepLearning.AI](#))
 - Machine Learning Specialization ([Stanford University](#))
 - Generative AI with LLMs ([DeepLearning.AI](#), [AWS](#))
- **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

-  [biodiversity](#)
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: Mar 26, 2025