XIAO PING SONG, PhD

8 years of research experience, 7 years in data science, and 3 years as a project manager. I lead end-to-end delivery for technical projects that develop metrics and predictive software. My research and teaching focus on applied machine learning and geospatial techniques.

Certified PMP and AWS Solutions Architect. My track record includes developing use cases for data products, acquiring exclusive data, building dashboard applications, leading technical workshops, and aligning diverse stakeholders in highly matrixed environments.

CONTACT

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EMPLOYMENT

2021

Project Manager, Postdoctoral Fellow, Adjunct Lecturer
National University of Singapore, Dept. Architecture 📍 Singapore

- Secured a 3-year grant for $1.5 mil
- Led procurement and 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 | 2022

Project & Product Manager, Postdoctoral Fellow
National University of Singapore, Faculty of Science 📍 Singapore

- Spearheaded Agile Sprints and client workshops for a data product that delivers 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 funding 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 | 2020

PhD Researcher
ETH Zürich, SEC, Future Cities Laboratory 📍 Singapore, Switzerland

- Drove initiatives for data sharing and industry talks, leading to the publication of four research papers in leading global journals
- Showcased research at global conferences (e.g., UK, Japan, Switzerland) and won the Three Minute Thesis competition

EDUCATION

2020

Ph.D. in Architecture (Urban Planning / Analytics)
National University of Singapore, College of Design and Engineering

- Thesis: Big Data Applications for Urban Greening
- 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

</> CODE & TOOLS

R / tidyverse / r-spatial / Shiny
Python / numpy / scikit-learn
PyTorch / Tensorflow / Keras
SQL / PostgreSQL / PostGIS
Git
Shell / Bash
RegEx
HTML / CSS
APIs (REST, GraphQL)
AWS / Google Cloud
QGIS / ArcGIS / Google Earth Engine
Docker

METHODS & DOMAINS

Metrics & feature engineering
Data visualization (inc. spatial)
Model diagnostics & debugging
Linear & mixed models (inc. GLM)
Decision trees / Ensemble models
Unsupervised learning
Deep learning (ANN, CNN, RNN)
Parallel programming
Remote sensing (satellite / LiDAR)
Image processing (inc. spectral)
IoT / Wireless technologies
Econometrics (e.g., natural capital)
Web scraping / analytics (GA4)
Questionnaire surveys

🖥 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
🔗 github.com/xp-song/Intro2R-Git

2019 | 2022 • **Introduction to R Programming and Statistics**
Online and in-person workshops covering a variety of topics in R
🔗 xp-song.com/posts/intro2r

2018 | 2020 • **Analysing Spatial Patterns of the Landscape**
Module Lecturer, National University of Singapore. Master of Landscape Architecture: Urban Greening Technologies & Techniques
🔗 xp-song.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-

✹ CERTIFICATIONS

2023 • **Generative AI with Large Language Models**
DeepLearning.AI, Amazon Web Services

2023 • **AWS Certified Solutions Architect (SAA-C03)**
Amazon Web Services

2023 • **Project Management Professional (PMP)**
Project Management Institute

2023 • **Deep Learning Specialization**
DeepLearning.AI

2023 • **Machine Learning Specialization**
Stanford University

🏅 AWARDS

2016 • **SEC PhD Scholarship (Fully Funded)**
Singapore National Research Foundation

2011 • **Best Full-time National Serviceman**
Officer Cadet School (Midshipmen Wing), Singapore Armed Forces

2009 • **Jacob Ballas Scholar's Award**
Perfect score (six distinctions), GCE 'A' Level Examinations

📦 SOFTWARE

📦 **biodivercity**
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

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