Ashwini Petchiappan

FRGS | (she / her)
Shaping data for impact & strategy
Oxford's Wallace Award-winner

Oxford, UK | (44) 7425795760 | Email | LinkedIn

Education

- M.Sc. Biodiversity, Conservation & Management (Merit & Best Dissertation)
University of Oxford, UK

- M.S. Environmental Science (Cum Laude)
TU Delft, Netherlands

- B.Tech. Engineering (Distinction)
National Institute of Technology, India

Skills

- **Coding**: Python, R, SQL, C++, JavaScript
- **Dashboards**: R Shiny, HTML, CSS
- **Cloud**: Azure, AWS, Databricks
- **GIS**: QGIS, ArcGIS, GEE, PyQGIS
- **Containerisation**: Docker
- **Version control**: GitHub
- **Research**: models, statistics, metrics, literature review, evidence synthesis
- **Communication**: presentation, writing
- **Leadership**: project management, stakeholder engagement, planning

Awards & Honours

- Oxford Alfred Wallace Award
- Panelist for JSPF Scholarship
- TU Delft Excellence Scholarship
- Mitacs Globalink Research Award

Memberships

- Fellow of Royal Geographical Society
- Member of British Ecological Society

Conferences

- Govt. Geography Profession — 2025
- CBD COP-15 — 2022
- ESA Carbon from Space — 2022
- EGU General Assembly — 2020

Training

- Data visualisation
- Research design & planning
- Scientific writing

Experience

SENIOR DATA ANALYST/ENGINEER
DEFRA, UK Civil Service | Reading, UK | Aug 2024 - Present

- Architected data systems for £2B+ land management schemes, supporting 300+ users in evidence-based policy development.
- Developed **relational database app** with **API**, **UI**, automated **testing** & shared codebase (JS, Python, PostgreSQL, Docker, CI/CD).
- Designed **customer research** algorithms for 2M+ farm business to shape agri-environment strategy & targets.
- Built 20+ **ETL** pipelines; ~90% speed improvement (Databricks).
- Created packages for accessible data vis palettes & templates (R).
- Led **change management** for data migration to AWS to Azure.
- Delivered dashboards for proactive **stakeholder engagement** (R Shiny, HTML/CSS).
- Selected for technical showcase at Govt. Geography Conference.

RESEARCHER - Remote Sensing Metrics
Leverhulme Centre for Nature Recovery | University of Oxford, UK | Feb 2024 - Jul 2024

- Built quantitative ecosystem health framework for conservation.
- Led structured **literature review** of ecosystem **health metrics**.
- **Modelled** farm yield-forest health dynamics using LiDAR & multispectral imagery; explained ~80% variance (R).

RESEARCHER - Innovative Conservation
School of Geography & the Environment | University of Oxford, UK | Jun 2023 - Sep 2023

- Leveraged weather radar infrastructure across 50+ national stations for **large-scale** monitoring of bird **migration** (R, Docker).
- Developed LMMs to detect seasonal migration timing shifts.
- Identified route changes to shape **forecasts** & planning.
- Awarded **best research project** of the year by SoGE, Oxford.

PROGRAMME ASSOCIATE - Spatial Modelling
Dakshin Foundation & Indian Institute of Science | Bengaluru, India | Jan 2020 - Aug 2022

- Led India's pioneering telemetry study of leatherback migration.
- Modelled global nesting distribution using **machine-learning**.
- **Automated workflows** to generate 200+ maps; ~80% time saved (Python, R, PyQGIS).
- Managed 75+ experts to map global turtle presence at 1km res.

RESEARCHER - Remote Sensing
TU Delft | Delft, Netherlands | Jan 2019 - Sep 2019

- Discovered large-scale monitoring technique for Amazon **forest**.
- Innovated **land cover classification** system for inaccessible terrain.
- Designed detection models for **floods** & droughts.
- Presented at EGU & ESA conferences.

Selected Publications

1. The influence of vegetation water dynamics on the ASCAT backscatter–incidence angle relationship in the Amazon. HESS. Access Publication (**Selected as Highlight Paper**)
2. Post-nesting migration of leatherback turtles from Little Andaman Island in the Bay of Bengal. ENSR. Access Publication
3. Olive ridleys. State of the World's Sea Turtles Report. Access Publication
4. Environment Act Habitat Target Evidence Report - 2025 (Gov.UK)