Dr Fang Yuan

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Scientist and problem solver with deep expertise in Earth observation, remote sensing, large-scale data systems, and cloud-based application development. Drawing on experience across Australia and international initiatives, I apply Earth observation technology to create value and address global challenges.
I lead multidisciplinary, cross-sector teams to deliver innovative, high-impact projects, and I am committed to hands-on, inclusive leadership that empowers people to excel.

EDUCATION

- Ph. D. in Physics, 2010, University of Michigan, Ann Arbor, Michigan, USA
  Winner of the Kent M. Terwilliger Memorial Prize for best doctoral thesis in the Physics Department
- B. S. in Physics, 2003, Peking University, Beijing, China

PROFESSIONAL EXPERIENCE

Sep 2025 - now — Independent Consultant

Earth Observation Consultant

- Provide scientific advisory for EO application development, with a focus on data products that support environmental monitoring and sustainable development.
- Deliver technical guidance on the design, development, and large-scale production of EO applications using scalable, cloud-native technologies.

Jul 2022 - now — Digital Earth Africa

Senior Science Advisor

- Provide technical and strategic advice on data, platform, science and partner engagement.
- Lead and coordinate the development of satellite-derived services for the African continent, including operational water extent and water quality monitoring capabilities.
- Support transition of Digital Earth Africa program to Africa based Program Management Office.

Sep 2022 - Aug 2024 — FrontierSI

Earth Observation Technical Lead

- Led the development and delivery of EO technical and strategy projects for a diverse range of clients, including government agencies and commercial sectors.
- Advised on data science and technology for EO applications.
- Led and manage the Insights Team, a EO-specialized data science team.

Won Earth Observation Australia 2024 Award for Innovation in Earth Observation Made by a Group, Company, or Organisation

Sep 2021 - Jun 2022 — Geoscience Australia

Director of Operations, Digital Earth Africa

- Managed delivery of the Digital Earth Africa work program, including platform operation, service development, user engagement and capacity development.
- Led work planning, manage relationship and project delivery with African and global partners.
- Coordinated resources across multiple organisations to maintain a strong, cohesive and effective team.
- Worked with the Managing Director to implement program governance and support business development.

Named one of 2022 Leading Women in ML4EO by the Radiant Earth Foundation

Jan 2020 - Sep 2021 Geoscience Australia

Assistant Director, Product Development, Digital Earth Africa

- Led the science team of Digital Earth Africa, a program providing satellite data and derived information for the African continent to address sustainable development challenges.
- Led delivery of quality Earth observation based products and services, co-developed with African partners, for African users.
- Led development of the technical work program and supported the management team in strategic planning and monitoring.
- Supported technical infrastructure development, user engagement and communications for the program and assisted work planning and delivery with African and global partners.
- Led development of synthetic aperture radar capability, working with industry and the Committee on Earth Observation Satellites (CEOS) analysis ready data working group.

Oct 2017 - Dec 2020 Geoscience Australia

Assistant Director, Terrestrial Product Development, Digital Earth Australia

- Led and coordinated the development of satellite imagery-based products, for applications related to surface water, fire impact, vegetation cover and change.
- Supported disaster response using satellite imagery.

Nov - Dec 2017, Nov - Dec 2018 Geoscience Australia

A/g Director, Terrestrial Product Development, Digital Earth Australia

- Led one of the science teams in Digital Earth Australia, an Australian government program that turns satellite data into information about Australia's natural and built environments to support decision-making by governments and industry.
- Led the team to work effectively and deliver satellite imagery-based products for land cover and change monitoring.

Aug 2016 - Oct 2017 Geoscience Australia

Copernicus Data Hub Manager

- Managed delivery of the Copernicus Data Hub project, a collaboration between commonwealth and state government agencies to bring petabytes of data from new generation European satellites into Australia.
- Coordinated data transfer from Europe to Australia, liaising with the European Space Agency (ESA) and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) data delivery teams.
- Led technical development of the Hub data archive and delivery portal, working closely with teams at the National Computational Infrastructure, partner government agencies and overseas developers.
- Represented and promoted the Data Hub in international collaboration meetings and domestic workshops.

Feb 2011 - Jul 2016 Australian National University, Australia

Postdoctoral Research Fellow at the ARC Centre of Excellence for All-Sky Astrophysics

- Led and played key roles in the operations of the SkyMapper Transient Survey and the Australian Dark Energy Survey, both producing critical observations for modern cosmology.
- Developed software to collect, manage and analyze optical sky survey images for studying astrophysical transients that change on minutes to days timescale.
- Led studies of cosmic explosions.
- Developed software to enable automated followup observations of astrophysical events detected by high energy satellites, radio telescopes and gravitational wave detectors.
- Coordinated science team activities for the Australian-Chinese Antarctic Survey Telescopes Collaboration.
- Taught introductory Python to astrophysics graduate students.

Nov 2010 - Feb 2011 Australian National University, Australia

SkyMapper Telescope Commissioning Technician

- Supported telescope operation and participated in software development.

Apr 2010 - Nov 2010 Queensland University of Technology, Australia

Research Assistant (part time)

- Managed and processed large high frequency trading data for financial research.

May 2005 - Jan 2010 University of Michigan, USA

Graduate Research Assistant

- Discovered some of the most luminous supernovae known to date.
- Developed difference imaging software and automated data processing to study astrophysical transients.
- Led the operation of a rapid responding robotic telescope network in Australia, US, Namibia and Turkey.
- Led and participated in the studies of high energy astrophysical transients, in collaboration with satellite missions and neutrino experiment.

Sep 2003 - Apr 2005 University of Michigan, USA

Graduate Teaching Assistant (Tutor and Lab Instructor)

- Tutored for general physics and instructed introductory physics lab.

LANGUAGES

- English: fluent; Chinese (Mandarin): native

PROFESSIONAL MEMBERSHIP AND SERVICE

- President, Earth Observation Australia Inc (Feb 2026 - current)
- Senior member, Institute of Electrical and Electronics Engineers (IEEE) (2023 - current)
- Member, Earth Observation Australia Management Committee (2022 - 2025)
- Publicity Co-Chair, IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2025 organizing committee (2021 - 2025)
- Member, CEOS Analysis Ready Data Radar working group (2020 - current)
- Member, Geoscience Australia Science in Australia Gender Equity (SAGE) Self Assessment Team (2018 - 2019)
- Member, ARC Centre of Excellence for All-Sky Astrophysics (CAASTRO) Gender Action Committee (2014 - 2015)

PUBLICATIONS AND TECHNICAL REPORTS

Authored and co-authored technical reports on data quality impacts on applications, cloud-native geospatial data formats, and regional applications of Earth observation technologies. A full list of peer-reviewed journal publications is available via ORCID: `https://orcid.org/0000-0001-8315-4176`.