Wei Liu

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Education

PhD
National University of Singapore
2005

BEng
Harbin Institute of Technology
1999

Affiliations

- Member of IPENZ
- Member of IPWEA (NZ)
- Member of Greenroads Foundation
- Membership for NZ Ministry of Transport Knowledge Hub – Environment
- Member of The Artificial Intelligence Forum of New Zealand (AIFNZ)

Certifications

- FME Certified Professional
- FME Flow Certified Professional
- Intel Edge AI Certification
- ESRI MOOC Training Certificate on Image in Action
- Amazon Web Services (AWS) Certified
- Advanced Microsoft Power BI Certificate
- Tableau Desktop Advanced Certificate

Summary

Accomplished Data Scientist and Technical Advisor with over 25 years of experience in infrastructure and environmental data analytics. Dr. Wei Liu is renowned for leveraging data science and artificial intelligence to drive innovation, optimize performance, and deliver actionable insights in complex engineering and technology landscapes. His work spans across multiple continents, contributing to significant advancements in predictive modelling, asset management, and strategic decision-making.

Career Highlights

- **Data Scientist, GHD (2018 – Present):** Spearheaded major projects in Australia and the USA, focusing on AI-driven predictive analytics for infrastructure and environmental applications.
- **Technical Advisor, Various Roles, GHD (2012 – 2018):** Provided strategic advice on asset management, road condition predictive modelling, and investment optimization for public and private sector clients.
- **Senior Engineer, Fugro PMS, and Samwoh (2005 – 2011):** Led data collection and quality management for road network condition analysis, contributing to national transport infrastructure improvements.

Key Skills

- **Data Science & Analytics:** Expert in data visualization, analytics, and predictive modelling, driving insights and strategic decisions.
- **Machine Learning & AI:** Proficient in advanced ML and AI techniques for infrastructure condition assessment, environmental monitoring, and optimization.
- **Project Leadership:** Demonstrated ability to lead and deliver complex projects with multidisciplinary teams, ensuring stakeholder engagement and project success.

Selected Projects

- **Air Quality Monitoring Dashboard, Port of Tauranga (2021):** Developed a live data-driven dashboard to monitor and analyze air quality, enhancing environmental management practices.
- **Road Crash Risk Analytics Portal, Waka Kotahi NZ (2020):** Implemented a kiwiRAP-based analytics portal, improving road safety understanding and decision-making.
- **Three Waters Asset Risk Assessment Tool, Taupo District Council (2019):** Created a GIS-based tool for comprehensive water network risk analysis, facilitating asset management and maintenance planning.
- **Short-Term Electricity Price Forecasting, Sun Metals (2019):** Developed a predictive model for electricity price forecasting, optimizing operations and enhancing energy management.
- **Bridge AI Portal, PennDOT (2019):** Created predictive models for bridge condition assessment, enhancing maintenance and repair decision-making.
- **School Infrastructure Optimization, NSW Department of Education (2018):** Led the development of a cloud-based tool for optimizing a $12 billion investment program costs.

Programming Languages

- Proficient in advanced data analytics, machine learning tools, and several programming languages including R, MATLAB, Python, JavaScript, PHP, SQL, and C++.

References

Available upon request