XIE NANZHENG, CISSP, CRISC

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Education

- **University of California, Berkeley,** *Master of Information Management and Systems*   *In Progress (2025-27)*
- **National University of Singapore** *Bachelor of Engineering (Industrial & Systems) GPA 4.3/5.0*
  Study Abroad: University of Wisconsin, Madison, Summer Programme: Hanyang University, Korea

Certifications: CISSP (ISC²), CRISC (ISACA), CompTIA Sec+, ICS301 (Idaho National Lab), SANS Coin (CTF), Azure Solution Architect Certified, Data Analytics for Finance by NUS, AWS Certified Solutions Architect

Skills

- **Technology:** C/C++, Python, R, SQL, Tableau, PowerBI, Kali-Linux, Wireshark, Kubernetes, AWS/Azure cloud,
- **Quantitative:** Advance OR, Time Series Forecasting, Data Engineering, AI & Natural Language Processing

Awards & Recognition

- Singapore Public Service Scholarship (2015) - Full tuition scholarship for leadership and academic excellence
- Public Service Data Visualisation Competition - Top 4 in Singapore (2023)
- Ministry of Sustainability Innovator's Award - Project & Individual (2023 & 2025)
- Singapore Public Service Innovation Award (2025)

Professional Experience

PUB, Singapore's National Water Agency *(InfoTech and Digital Transformation Department)*
Senior Data & Cybersecurity lead (Team of 7)   *2022-Current*

- Project Lead & Data engineer in creating National Insider Threat Detection System using advanced classification techniques and visualisation, Analysis in R and front-end using Shinny, the stack is implemented within Government Commercial Cloud (Azure).
- Project Lead & Software developer for "Insider Threat Detection System", proactively identifying anomalous user behaviours, detection of unauthorized or suspicious activities to Security Operation Centre.
- Data Engineer the Water Sector Readiness Dashboard using PowerBI for Executive by integrating MITRE ATT&CK and NIST frameworks, this is endorsed by the Commissioner of Cybersecurity, Singapore.
- Software Developer in creating in-house Phishing tool to integrate with third party Email software within Government.
- Publish Quarterly Threat Intelligence Report in OT Sector. Develop scripts for detection of IOCs for Infrastructure Owners. Lead of the strategy team that plans 5-Year Cyber Master Plan and Policy Paper for Water Sector.
- Organised PUB's Cybersecurity Expert Panel and initiated strategic partnership with US Department of Energy's Idaho National Lab, Dragos, and US NCCoE, to review reference secure architecture in the Water Sector.

External Relation Lead (concurrent appointment)   *2023-2024*

- Led a high-profile delegation to Türkiye, completed the works behind MOU with Ankara Water on energy projects.
- Served as the Liaison Officer with foreign utilities, formalising agreements on AI-driven, digital transformation sharing between Singapore's National Water Agency and Australia and UK Utilities.

Data Scientist (Water Reclamation Department)   *2020 - 2022*

- Developed In-house algorithm using Random Forest Clustering and Time Series Modelling. This innovation predicts sludge thickness with incoming wastewater volume, time of the day, and Deep Tunnel Sewerage Level, resulting in annual recurring savings of S$750,000 in Critical Infrastructure and have won multiple awards in Singapore.

Robert Bosch (Based in Singapore) *Software Engineer (Intern)*   *2019*

- Software Engineer in the development of intelligent cabin filter, utilizing RGB light sensors to predict filter condition using Python, the product was integrated into Bosch's product line.

Ching Luh Nike Division (Based in Vietnam) *Risk Analyst (Intern)*   *2019*

- Conducted financial risk analysis of downtime. Provided strategy guidance to reduce risk impact and proposed asset re-balancing in two largest shoe manufacturing plants in Vietnam.

Major Projects

International Science Festival, Korea

- Represented Singapore in Korea's global innovation competition, securing a Top 3 placement by designing a marketing strategy that elevated brand visibility and expanded international market reach for a Korean product.

Bollore Group (Air Freight Optimisation on Transit Warehouse Operation)

- Software developer created a full stack application for warehouse freight services. The final application featured optimised routing for logistics management via a mobile app (React.js), with the backend through AWS APIs.