Yin Jeh Ngui (Jason)

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Postdoctoral researcher with a PhD in Civil Engineering and emphasis in Geotechnical Engineering and Engineering Geophysics. Over 7 years of professional experience in near-surface geophysical survey, real-time monitoring of slope displacement and suspended sediment transportation, dielectric spectroscopy, and in-house HW/SW interfacing. Published 7 SCI-indexed papers with one pending US/TW patent.

Highlights

- Geophysical survey professional
- Field work supervision
- Programming fluency (Python, C++, Node-RED)

- Real-time remote monitoring with predictive maintenance
- Receptive, multitasking, detail-oriented and high mobility
- In-depth data interpretation and presentation

Work Experience

Postdoctoral Researcher   Oct 2019 – Present
Disaster Prevention and Water Environment Research Centre, NYCU, Taiwan

- Lead over 30 near-surface geophysical surveys (surface seismic, ERT, TDR, borehole televiewer, and suspension P-S logging) in slope, dam and reservoir, LNG storage, nuclear power plant, airstrip, and contaminated site.
- Deploy 15 slope monitoring stations and 10 reservoir SSC monitoring stations, which are based on low-powered Raspberry Pi SBC, TDR device, and in-house IoT modules (e.g. remote relay, power monitoring…).
- Develop and optimize in-house automation software with Python, Kivy, and SQLite within the first 2 month.
- Accelerated 21 project schedules up to 20% average and reduced 50% instrument cost via in-house modules.
- Published 4 SCI-indexed, 4 EI-indexed and 6 conference papers over the past 3 years.
- Co-advised 2 doctoral and 8 masters students from Geo-Imaging and Geo-Nerve research group.

Projects

Integrated slope monitoring program   2016 – Present
Design and supervision: 15 borehole installations using TDR cable and inclinometer casing
Development, deployment, and optimization: Real-time displacement monitoring using TDR and IoT devices

Micro-hydropower based renewable energy system performance assessment   2020 – Present
Design and deployment: Real-time IoT logger for energy generation, water level, and flow velocity
Supervision: Literature consolidation, open-channel hydraulic condition analysis

Advanced time-domain reflectometry (TDR) dielectric spectroscopy   2014 – Present
Research and deployment: Suspended sediment concentration (SSC) monitoring for 16 reservoir stations and 2 offshore stations
Planning and development: Contaminated soils dielectric spectroscopy, soil moisture content and density estimation

Multichannel analysis of surface waves (MASW) seismic survey   2019 – Present
Planning and execution: Risk assessment and dam safety inspection for Hushan Reservoir
Analysis: Shear-wave velocity (layered Vs and Vs_{30}) inversion, dam structure assessment

Electrical resistivity tomography/imaging (ERT/ERI)   2016 – Present
Planning and execution: Site investigation in contaminated sites and slopes
Analysis: Anomaly delineation, time-lapse inversion

In-situ borehole geophysics projects   2015 – Present
Planning and execution: Geotechnical investigation using e-logging, suspension PS-logging, borehole optical and acoustic televiewer

Education

PhD in Civil Engineering   Sep 2014 – Jun 2019
National Chiao Tung University   Hsinchu, Taiwan
BEng (Hons) in Civil Engineering   Sep 2010 – Jun 2013
The Hong Kong Polytechnic University   Hong Kong S.A.R.

Skills

Programming	: Python, Matlab, Arduino C/C++, Node-RED, nginx, MQTT, MySQL, SQLite, Tensorflow, Maple, Mathematica, IBM SPSS
Geotechnical	: RGLDip, DIPS, Slope2000, PLATE, ETABS, Microsoft Project
Geophysical	: AGI EarthImager, Comsol Multiphysics, SurfSeis, SpecFEM3D, Winlogger, DopTV, HiRAT, RGLDIP
CAD / GIS	: AutoCAD, Sketchup, Google Earth Pro, ArcGIS, QGIS, Tecplot, Surfer, Grapher
Languages	: Mandarin Chinese (Native), English (Fluent, IELTS 8.0), Malay (Fluent), Cantonese (Fluent)