JOSHUA DIMASAKA

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Applied AI professional with technical backgrounds in scientific research, data science, regional climate & disaster risk modelling, civil & structural engineering, public policy, entrepreneurship, and innovation

PROFESSIONAL EXPERIENCE

Visiting Researcher - Digital GreenTalents Award, Digitalization & Sustainability Apr - Jun 2026
German Aerospace Center, Earth Observation Center, German Remote Sensing Data Center *Weßling, DE*
- Led the proposal for an open benchmark dataset combining building-change detection and vulnerability attribution, leveraging geospatial foundation-model satellite embeddings to support regional risk-analysis workflows.

Visiting Researcher - Helmholtz Award, Applied Data & Information Sciences Jul - Sep 2024
German Aerospace Center, Earth Observation Center, German Remote Sensing Data Center *Weßling, DE*
- Created a constrained machine learning methodology using census data & expert conditional relationships to enhance building-exposure and vulnerability mapping; first-authored paper under review in the *ISPRS Photogrammetry & Remote Sensing* journal.

Postgraduate Doctoral Researcher - UK Research & Innovation Award Oct 2022 - Sep 2026
UK Centre for Doctoral Training in AI for Environmental Risk *Cambridge, UK*
- Established an academia-industry collaboration with an international scientific NGO; appointed as Urban Resilience Fellow.
- Developed a spatiotemporal model combining graph deep learning and state-space modeling to enhance dynamic exposure and vulnerability mapping; first-authored paper selected for oral at *AAAI AI for Social Impact Track* (24% acceptance, 167/693).
- Formulated a weakly supervised transition matrix modeling regional dynamics in disaster-affected areas; first-authored paper under review in *Progress in Disaster Science*; Best Overall Paper, *Int'l Disaster & Risk Conference.*
- Produced an open-source dataset METEOR 2.5D monitoring the physical vulnerability in 46 UN-recognized Least Developed Countries; selected for 3-min presentation at *AAAI Empowering Global South AI Community Activity* (60% acceptance, 64/107).
- Introduced a probabilistic regional metric for building typology estimation task; first-authored paper for poster at *ICLR ML for Remote Sensing Workshop* (60% acceptance, 43/71).
- Improved exposure analytics for settlement-road systems from climate-influenced disasters using graph representation of built environment data; first-authored paper published in *Environmental Research Letters*; Outstanding Presentation Award, *AGU 2023.*
- Volunteered for remote sensing data analytics and team coordination on impact assessment efforts in the aftermath of 2025 M7.7 Myanmar-Thailand and 2023 M7.8 Turkey-Syria earthquakes.

Disaster Risk Consultant Mar - Aug 2022
Earthquakes & Megacities Initiative and Quezon City Government *Quezon City, PH*
- Developed risk assessment tools to analyze 400,000 buildings and 3.2-million population for the 'Big One' M7.2 earthquake.

Earthquake Risk and Loss Consultant Mar 2021 - Mar 2022
Stanford University, Land, Buildings, and Real Estate Office *Stanford, CA, US*
- Reproduced an old Fortran executable program using MATLAB and developed a geospatial building information database for the client's property management office using QGIS and MS Excel Spreadsheet.
- Analyzed the financial losses and business interruption of 750 education, real-estate, and residential buildings when subjected to large earthquakes (up to magnitude 7.6) and designed a Tableau dashboard for stakeholders' use.

Structures & Natural Hazards Researcher Jun - Sep 2021
FM Global, Engineering and Research Group *Norwood, MA, US*
- Improved the firm's library of seismic design hazard and maps by more than 246%, starting with 130 and ending with 320 maps (or 190 new maps) from over 130 countries and territories.

Geospatial & Machine Learning Graduate Researcher Jun 2020 - Jun 2021
Stanford University, Structures as Sensors Research Group *Stanford, CA, US*
- Programmed the application of a new Bayesian causal inference algorithm that uses satellite imagery signals to improve the landslide, liquefaction, and building damage models of the entire US; Co-authored a published paper in *Nature Communications.*

EDUCATION

University of Cambridge
PhD *Artificial Intelligence for the study of Environmental Risks* 2023-2026
MRes *Environmental Data Science* 2022-2023

Stanford University
MA *Public Policy,* ***MS*** *Civil & Environmental Engineering,* ***Knight-Hennessy*** *Graduate Fellow* 2019-2022
Stanford GSB ***Executive Education****, Ignite Certificate, Entrepreneurship & Innovation* 2021

University of the Philippines
BS Civil Engineering, magna cum laude, one-semester early, college valedictorian, rank 1/341 2013-2018