

【2025 SyDE 國際知育成研修 實施報告】 2025 年 10 月 28 日～2025 年 10 月 31 日

The four-day workshop, held from October 28–31, 2025, in Taipei, focuses on "Digitalized Disaster Governance in the AI Era". The program features seven keynote lectures and thirteen topic talks from international experts representing Taiwan, the U.S.A., Japan, the Philippines, and South Korea. Key sessions cover AI-powered management, earthquake early warning systems, machine learning for earth observation, and climate communication. The final day includes a visit to the Taiwan Central Emergency Operation Center (CEOC) and Taipei 101. I gain technical insights into : AI Integration: Utilizing GenAI, chatbots, and "Applied Games" for disaster preparedness and reporting. Data Analysis: Leveraging big data, mobile phone data, and low-cost sensors for real-time monitoring. Forecasting: Understanding AI-driven downscaling for climate data and landslide susceptibility mapping.

The agenda highlights several critical frontiers for the field: Moving "Beyond the Algorithm" to ensure AI tools are actionable in real-world scenarios. Improving Climate Communication between scientists and policymakers through AI assistants. Managing Digital Mobilization and volunteer coordination effectively during post-disaster phases.

The workshop presents a highly comprehensive and practical look at modern disaster governance. By combining academic lectures with a visit to a functional emergency center (CEOC), it bridges the gap between theoretical AI research and operational disaster response.



With Tohokudai student at NCDR



With NCDR Director



With colleagues at NCDR



台湾で開催された防災分野における AI 活用をテーマとする国際ワークショップに参加した。本ワークショップでは、AI 技術をどのように災害対策に役立てるかという観点から、研究機関や行政機関による実践的な取り組みが紹介された。特に印象に残ったのは、地震発生直後に被害の大きさを迅速に推定し、関係機関へ情報を共有する仕組みについての講演と、豪雨や台風に伴う洪水リスクをデータに基づいて予測し、早期警報につなげる取り組みの紹介である。いずれも、AI を単なる研究技術としてではなく、実際の防災業務や意思決定の場面で活用している点が強く印象に残った。

今回の参加を通じて、AI は「高度な技術」というよりも、「多様なデータを整理し、判断を支える道具」として社会に実装されていることを学んだ。また、防災分野では、正確さだけでなく、迅速さや分かりやすさも重要であることを改めて認識した。研究成果を社会に還元するためには、専門的に優れているだけでなく、現場で使える形に落とし込む工夫が不可欠であるという点が大きな学びであった。

私の専門は数理モデルであり、これまで理論的な側面を重視した研究を行ってきたが、今回のワークショップを通じて、現実の社会課題と結びついた研究の重要性を強く感じた。今後は、数理モデルの強みである構造の明確さや理論的裏付けを活かしつつ、実データとの融合や応用分野への展開を意識した研究へと発展させていきたいと考えている。特に、データに基づく予測やリスク評価の枠組みに数理的視点を取り入れることで、より信頼性の高いモデル構築につなげることが目標である。

さらに、今回のワークショップでは多くの研究者や実務者と交流することができ、国際的な研究ネットワークを広げる貴重な機会となった。異なる分野や国の視点に触れることで、自身の研究を客観的に見直す契機にもなった。今後はこうしたつながりを大切にしながら、専門分野の深化と社会的応用の両立を目指して研究活動を進めていきたい。



ワークショップの様子

田中翔也（工学研究科・土木工学専攻・M2）

As a student focusing on the use of Artificial Intelligence (AI) in research, I recognize the critical role of AI in disaster mitigation. Disaster preparation framework as presented in the workshop: mitigation, preparation, response and recovery highlight the importance of high-tech tool and acknowledge the AI as the enabler in managing the growing disaster extremities in Taiwan. The four-day, in-person program in Taipei centers on “Digitalized Disaster Governance in the AI Era,” aligning directly with my PhD focus on AI/NLP pipelines, stakeholder sentiment, and image-repair strategies across various contexts.

The workshop structure which includes keynotes plus thematic talks maps neatly to my methods roadmap: low-cost, sensor-based earthquake early warning; big-data mining of news for emerging risks; earth observation and machine learning for response; and AI/IoT for resilient systems. These modules provide immediately usable techniques for my corpus building, event detection, and cross-media narrative analysis (e.g., change-point detection on sentiment tied to hazard timelines). Talks on crowdsourced reporting with GenAI and an AI assistant for climate communication will strengthen my stakeholder-message evaluation (IRT/SCCT) and help operationalize “Yasashii Nihongo” principles into measurable, equity-aware outcomes. Sessions on downscaling climate data, mobility analytics from mobile phones, and landslide/flood modelling expand my multi-hazard framing and support comparative Japan–Malaysia case studies. Networking with NCDR, PDC, and academia clarifies collaboration pathways and data-sharing ethics for consent-based dashboards. The immersive and experiential learning with key person in a significant MNC such as Nvidia provides a rare opportunity to understand the complex relationship between its open-sources simulation platform (Earth-2) and the sensitivity of climate changes. This opportunity enables student to use cutting-edge simulator to further deepen our understanding on climate change induced disaster management. The workshop provided a comprehensive platform for knowledge exchange, networking and understanding the necessary tool which may become critical during disaster. The workshop purpose and objectives are aligned with WISE SyDE program objectives as outlined in the snow-crystal type talent for cultivation, that is useful for my study and help me to understand multiple layers of complex topic, thus providing valuable insights for participants. The international setting and platform provide unprecedented exposure for further improving knowledge, understanding and value to complement my study, and further enhance my competencies to interact on international level regarding complex topics with focus on the dynamic of disaster management.



Technical visit to Central Emergency Operation Center



Discussion with panel speaker