CHENG-WEN FU

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Creative technologist working at the intersection of design, computation, and HCI. My work explores automation, simulation, and data-driven systems to reshape how architecture engages with technology and culture.

EDUCATION

Carnegie Mellon University, Pittsburgh, PA *05/2027*
Master of Science in Computational Design

National Cheng Kung University, Tainan, Taiwan *06/2023*
Bachelor of Architectural Design

WORK EXPERIENCE

Modeler and Computational Designer, *Illoca, US* *04/2024 - 08/2025*

- Developed Revit-based sample models and parametric façade in Grasshopper to construct an AI training dataset for design prediction and optimization.

Computational Designer, *J. J. Pan and Partners, Architects & Planners, TW* *05/2024 - 04/2025*

- Designed and implemented a custom Grasshopper plugin for early-stage carbon emission analysis, fusing data visualization and comparative metrics to help designers evaluate carbon performance of design schemes.
- Analyzed environmental performance using Flow Designer and Ladybug to inform sustainable design strategies, and contributed to the firm's annual publication.

Research Assistant, *Civil Engineering Dept. National Taiwan University, TW* *12/2023 - 05/2024*

- Programmed a full-stack web application integrating campus GIS and BIM 3D models with IoT sensor data, using Autodesk SimpleViewer to visualize real-time digital twin simulations for sustainability tracking and management.
- Co-authored a research paper presented at ICCBEI, proposing an integrated workflow to streamline sensor data management and digital twin construction while reducing maintenance costs.

Architectural Intern, *Field Office Architects, TW* *07/2021 - 01/2022*

- Assisted in conceptual and physical development of an urban design proposal, producing detailed drawings, study models, and client-presentation materials.

PUBLICATION

First Author, *International Conference on Civil and Building Engineering Informatics* *01/2025*

- Fu., Wu., Chang., and Hsieh. "Streamlining Sensor Registration and Updating Process in a BIM-based Digital Twin," Proceedings of the International Conference on Civil and Building Engineering Informatics (ICCBEI), 2025.
- *https://iccbei2025.hkust.edu.hk/ICCBEI_2025%20Proceedings.pdf*

HONOR AND AWARD

Merit Award, *Taipei Architects Association Student Competition* *09/2023*

- The project was recognized as a Top 20 finalist in a county-level urban design competition.

Merit Award, *CSCEC Construction Competition* *01/2022*

- Created a robotic fabrication workflow combining parametric design and prototyping to demonstrate an automated on-site construction process.

SKILLS

Creative Coding & Prototyping: Python, JavaScript, HTML/CSS, RhinoPython, Git, GitHub.

Modeling, Visualization & Immersive Technologies: Rhino+Grasshopper, Revit, Figma, Adobe Photoshop, Adobe Suite, Enscape, Fabrication

Environmental & System Simulation: Flow Designer, Climate Studio, APS Simple Viewer