

Chien-Pu (Nora) Huang

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LinkedIn: linkedin.com/in/chienpu

GitHub: github.com/chienpu

Location: Taipei, Taiwan

Research interests

Engineering Data Governance, Semantic Event-Driven Digital Twins, Lifecycle Carbon Governance, Smart Construction Process Automation, Knowledge Graph-Based Facility Intelligence

Academic positions

National Taipei University of Technology (Taipei Tech / NTUT) Taipei, Taiwan

Assistant Professor, Department of Civil Engineering Aug 2026 – Present

National Taiwan University (NTU) Taipei, Taiwan

Postdoctoral Researcher, Department of Civil Engineering Feb 2026 – Jul 2026

University of Houston Houston, TX, USA

Visiting Research Scholar, Department of Computer Science 2025

NSTC Graduate Students Study Abroad Program (千里馬計畫)

Education

National Taiwan University (NTU) Taipei, Taiwan

Ph.D. in Civil Engineering Sept 2019 – Jan 2026

Dissertation: Graph-Native Semantic Action Management for Operations and Maintenance Automation in Smart Built Environments

National Chiao Tung University (NCTU) Hsinchu, Taiwan

M.S. in Architecture Sept 2001 – June 2003

Specialization: Computer-Aided Design

National Cheng Kung University (NCKU) Tainan, Taiwan

B.S. in Architecture Sept 1996 – June 2000

Honors and awards

Best Paper Award, ISARC 2026 (43rd Int'l Symposium on Automation and Robotics in Construction) 2026

Dean's Award, College of Engineering, National Taiwan University 2026

Best Paper Award, 29th Symposium on Construction Engineering and Management 2025

NSTC Graduate Students Study Abroad Fellowship (千里馬計畫) 2025

Journal articles

Semantic digital thread framework for explainable lifecycle carbon management: An ontology-driven and auditable automation backbone

Huang, C.-P., & Hsieh, S.-H.

Automation in Construction, 188, 107026. (2026)

[doi:10.1016/j.autcon.2026.107026](https://doi.org/10.1016/j.autcon.2026.107026)

Semantic reasoning and integration for automating predictive maintenance in smart facility management

Huang, C.-P., & Hsieh, S.-H.

Advanced Engineering Informatics, 71, 104240. (2026)

[doi:10.1016/j.aei.2025.104240](https://doi.org/10.1016/j.aei.2025.104240)

Assessment of BIM interoperability issues in facility management

Huang, C.-P., & Hsieh, S.-H.

Journal of the Chinese Institute of Civil and Hydraulic Engineering, 36(5). (2024)

[doi:10.6652/JoCICHE.202409_36\(5\).0007](https://doi.org/10.6652/JoCICHE.202409_36(5).0007)

Conference papers

A plug-and-play semantic execution framework for reusable cross-domain automation in digital twins [Best Paper Award]

Huang, C.-P., & Hsieh, S.-H.

Proceedings of the 43rd ISARC, Singapore. (2026)

LLM-assisted semantic digital twin for explainable and auditable facility operations

Huang, C.-P., & Hsieh, S.-H.

Proceedings of the 2026 ASCE i3CE, Incheon, Korea. (2026)

Ontology-driven semantic framework and AI agent for smart cost and specification verification in public construction

Huang, C.-P., & Hsieh, S.-H.

International Conference on Computing in Civil and Building Engineering (ICCCBE), Taipei, Taiwan. (2026)

Applying systems theory for predictive maintenance in facility management: A performance evaluation framework using Neo4j

Huang, C.-P., & Hsieh, S.-H.

CECAR10, Jeju, Korea. (2025)

Semantic Digital Twin Technologies for Integrating Heterogeneous Data in Building Carbon Management [Best Paper Award]

Huang, C.-P., & Hsieh, S.-H.
29th Symposium on Construction Engineering and Management, Kaohsiung, Taiwan. (2025)

Neo4j-powered workflow for lifecycle carbon management: The NTU campus case study

Huang, C.-P., & Hsieh, S.-H.
CIB World Building Congress 2025, West Lafayette, IN, USA. (2025)
[doi:10.7771/3067-4883.2108](https://doi.org/10.7771/3067-4883.2108)

Ontology-driven automation for BIM–FM data integration using Neo4j, Python, and workflow platforms

Huang, C.-P., & Hsieh, S.-H.
ASCE i3CE 2025, New Orleans, LA, USA. (2025)
[doi:10.1061/9780784486436.073](https://doi.org/10.1061/9780784486436.073)

Research grants	NSTC Graduate Students Study Abroad Program （千里馬計畫） Information Security Enhancement in BIM and FM System Integration 2025 National Science and Technology Council (NSTC) Role: Researcher Host: University of Houston, USA
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Teaching experience	Assistant Professor, Department of Civil Engineering (NTUT) Aug 2026 – Present Teaching Assistant, Engineering Graphics Practicum (NTU) 2020 – 2021 Designed and taught practicum content; instructed technical drawing and digital modeling; developed course materials and managed grading.
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Industry experience	Taiwan Semiconductor Manufacturing Co., Ltd. (TSMC) , Hsinchu, Taiwan Senior Engineer Aug 2022 – Mar 2023 BIM and facility data management for high-tech semiconductor fab construction and operations. Design Injoy Architects & Associates , Taipei, Taiwan Registered Architect Oct 2013 – Nov 2019 Led architectural projects; BIM implementation; building permit review and consultation.
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Design Injoy Interior Design Co., Ltd., Taipei, Taiwan

Principal / Founder

Oct 2012 – Nov 2019

Founded and managed interior design firm; project delivery and business operations.

Certifications & licenses

Registered Architect, Republic of China (Taiwan) – Private Practice in Taipei, 2013–2019

BSI Certified BIM Professional – Information Manager

Public Building Safety Inspection Officer

Accessibility Facilities and Equipment Inspector

Certified Interior Renovation Design and Construction Professional

Rotational Architect for Building Permit Review, Taipei City

Skills

Programming & Data: Python, SPARQL, Cypher (Neo4j), SQL

Knowledge Representation: OWL, RDF, SHACL, PROV-O, Brick Schema, SSN/SOSA, Protégé

Graph & AI: Neo4j, LangGraph, LangChain, LLM integration

BIM & Design: Autodesk Revit, SketchUp, AutoCAD, GIS

DevOps & Web: GitHub, Docker, JupyterHub, Netlify

Languages: Mandarin Chinese (native), English (professional)

Service

Peer Reviewer, KSCE Journal of Civil Engineering (4 reviews) 2026

Taipei City Government – Rotational Architect for Building Permit Review

Taipei City Government – Community Architect (Voluntary Service)

NTU Civil Engineering – CAE Group Summer Internship Coordinator

Industry Training – Instructor, FamilyMart Engineering Dept. In-Service Training