CHIA HUI YEN

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EDUCATION

CARNEGIE MELLON UNIVERSITY May 2026
Master of Science in Computational Design **Pittsburgh, PA, USA**
Relevant Courses: Java for Application Programmers, Data Structures for Application Programmers, Generative Modeling, Fundamentals of Programming & Computer Science

TSINGHUA UNIVERSITY June 2024
Bachelor of Architecture **Beijing, China**
Relevant Courses: Calculus A(1), Computer Aided Architectural Design Method, C++ Programming, Architectural Mathematics, Structural Engineering and Building Structure

RELEVANT EXPERIENCE

Architectural Robotics Research Assistant September 2024–December 2024
School of Architecture, Carnegie Mellon University **Pittsburgh, PA, USA**

- Designed a customized ***3D binder jet printer with robotic arms*** specifically for processing construction and demolition (C&D) fines, optimizing printing efficiency under the guidance of Professor Joshua Bard.

Research Assistant Dec 2023–May 2024
Department of Building Science and Technology, Tsinghua University **Beijing, China**

- Explored human-centered design approaches and advanced automated systems development, including ***Python-based optimization algorithms*** and ***automation machines*** for complex digital fabrication installations.
- Developed a ***C++ program*** to control and manage serial communication between electronic component***s (Inkjet Printhead Controller, Arduino, stepper motors, encoders, etc.***) and built an automated rod labeling machine from scratch, reducing installation time by over 33% in real-world weaving structure installation.
- Engineered a pipeline for woven structures using ***Kangaroo, Grasshopper, and Python***, enabling efficient prototyping and mass simulations. Achieved the transformation of 2D metal pipes into irregular 3D-curved forms, successfully applied in complex digital fabrication installations.

Intern Architect May 2023–August 2023
MAD Architects **Beijing, China**

- Collaborated on parametric design and detailed construction tasks at ***industrial level***, rationalizing non-uniform surfaces and parameterizing paneling on irregular geometries with ***Rhino and Grasshopper*****.** Facilitated the practical implementation of complex parametric 3D models for construction.

Virtual Space Designer July 2022–Feb 2023
AEON Labs **Beijing, China**

- Created virtual spaces based on Web 3.0 context, including an interactive VR showroom for a commercial brand, using ***Unreal Engine and Blender*** for model creation.

ACADEMIC EXPERIENCE

Research on 3D-printed Standardized Small-Scale Architectural Model Joints July 2023
School of Architecture, Tsinghua University, Advisor: Professor Ning Zhu

- Co-authored paper pending publication and presented at *Symbiotic Intelligence: Proceedings of 6th International Conference on Computational Design and Robotic Fabrication (CDRF 2024)*.

AWARDS & SCHOLARSHIP

Carnegie Mellon University Architecture Merit Scholarship 2024-2025
Tsinghua University-Malaysia Outstanding Undergraduate Students Scholarship 2018-2023

SKILLS

Programming language: Python, C++, Java
Frameworks & Tools: Adobe Creative Suite, Blender, Arduino, AutoCAD, Rhinoceros 3D, Grasshopper 3D, Kangaroo, Unity, SketchUp, OpenCV
Expertise: Digital fabrication, automation, 3D printing, Computational Design, 3D Modeling
Languages: English (IELTS 7.5), Chinese, Malay, Cantonese