

PENGYU CHEN

Computational Design & Architecture

+44 7350 126169 | pengyu.chen.25@ucl.ac.uk | LinkedIn

EDUCATION

University College London

Sep 2025 – Sep 2026

MSc Architectural Computation

Core courses: Digital Studio, Digital Ecologies, Computational Analysis, Computational Synthesis, Morphogenetic Programming

Dalian University of Technology

Sep 2020 – Jul 2025

Bachelor of Architecture

INTERNSHIP EXPERIENCE

Design Institute of Architecture of Dalian University of Technology Co., Ltd

Jul – Dec 2024

- Supported design development and construction documentation for university and large-scale residential projects, producing plans, elevations, sections and drawing updates in AutoCAD.
- Assisted with drawing coordination and site visits, developing an understanding of professional workflows, detailing and buildability.

PROJECT EXPERIENCE

The Dual Reality of Topological Performance

Jan – Mar 2026

- Contributed to a Python-based workflow integrating topology generation, force-density form-finding, geometric performance metrics and Karamba3D structural analysis.
- Evaluated shells across 12 boundary geometries and 5 topology patterns, using K-means clustering and multiple linear regression to investigate geometric and structural performance.
- Applied the workflow to the British Museum Great Court roof, translating quantitative findings into topology and fabrication decisions.

Interactive Hybrid Urban Generation

Oct – Dec 2025

- Developed an interactive urban generation system combining Wave Function Collapse, Marching Cubes and user-driven control.
- Built a hybrid Grasshopper–Unity workflow using adjacency rules, socket logic and bitmask-based massing to generate varied urban configurations.

Urban Green Infrastructure in High-Density Cities

Oct – Nov 2024

- Applied Grasshopper and Wallacei to optimise high-rise massing and spatial distribution in a dense urban site.
- Developed modular vertical planting systems integrating ecological performance, housing and urban regeneration strategies.

SKILLS

Computational methods: Wave Function Collapse, generative design, genetic algorithms, geometric optimisation, form-finding, structural analysis and simulation

Software: Rhino, Grasshopper, Unity, AutoCAD, Adobe Photoshop, Illustrator, InDesign, Microsoft Office

Programming: C#, Python

Languages: Mandarin (native), English (C1)