

YINGLEI (AMBER) CHEN

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EDUCATION

- 2022.8-2023.8 **University of Pennsylvania, Stuart Weitzman School of Design** Pennsylvania, USA
Master of Science in Design: Robotics and Autonomous System
Graduated with Distinction, GPA:3.96/4
Course: *Programming Languages and Techniques, Material Agencies: Robotics & Design Lab, Introduction to Cyber-Physical Systems, Experimental Matter, Scientific Research & Writing.*
- 2015.9-2021.6 **Guangxi University, Civil and Architectural Engineering College** Nanning, China
Bachelor of Engineering, Architecture (5-Year Program)
Graduated with Distinction, GPA:3.75/4 (Top 10%)
Initially pursued a major in English and transitioned to the Architecture in June 2017.
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RESEARCH EXPERIENCE

- 2023.7-Present **Visiting Scholar | “Ceramic Ecologies”** Remote
Southern University of Science and Technology, School of Design
 - Contributed research within the Materials Research Group, advancing Bio-inspired Responsive Ceramics and their integration in production design.
 - Investigated organic natural patterns' behavioral rules and identified synergies with triply periodic minimal surfaces (TPMS).
 - Developed digital parametric models using generative design tools to optimize materials application.
 - Assisted in the development and enhancement of the group's website, improving functionality and user experience.
- 2023.1-2023.5 **Master Student | “Robotic Approach to Geometrically Variable Ceramic Part Production”**
University of Pennsylvania, ARI Robotics Lab Pennsylvania, USA
 - Engaged in a collaborative master’s research project at ARI Robotics Lab, where I employed advanced technologies such as ABB robots, CNC machines, 3D printers, and Arduino for bespoke robotic fabrication tooling.
 - Crafted and tested a digital-to-physical model prototype to validate the approach's feasibility.
 - Developed an innovative solution by integrating Unity-based VR with robotic fabrication to enhance user immersion in ceramic production.
 - Co-authored technical reports and research paper to ACADIA 2023 conference, focused on Computer Aided Design in Architecture.
- 2018.8-2020.8 **Research Assistant | Parametric and Performative Design Research Lab** Nanning, China
Guangxi University, Civil and Architectural Engineering College
 - Played a key role in a research project focused on parametric modeling and spatial optimization of sustainable residential areas, analyzing building parameters and formulating assessment indices using GHPython and Grasshopper. Project was selected and funded by National College Student Innovation and Entrepreneurship Training Program.
 - Co-authored an invention patent and research paper on the design and spatial optimization of sustainable residential areas.
 - Collaborated on literature curation and advanced mathematical modeling for optimized residential parking lot designs.
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WORKING EXPERIENCE

- 2023.1– 2023.5 **the University of Pennsylvania, Stuart Weitzman School of Design** Pennsylvania, USA
Graduate Teaching Assistant, ARCH 6360: Material Formations
 - Instructed and mentored 80 students in generative design, ABB robotic system operations, Grasshopper, and Python, ensuring comprehensive understanding and skill development.

- Collaborated with faculty and fellow TAs to elevate course materials, emphasizing advancements in robotic practices and projects.
- Conducted comprehensive evaluations for 80 students, analyzing performance and assignments, and offered constructive feedback to optimize course outcomes and efficacy.

2021.7-2021.10 **AECOM Design & Consulting Co.**

Beijing, China

Urban Designer

- Crafted residential layouts and node buildings utilizing Rhino & Grasshopper for optimized design solutions.
- Produced and presented client-focused reports, 3D models, and 2D drawings, enhancing the project manager's client engagements.
- Contributed to a multi-disciplinary team winning first prize in an Urban Design Competition. Participated in 4 design phases: conceptualization, creation of 3D models, preparation of AutoCAD drawings, project documentation.

PUBLICATION

- Renhu W, Shunta M, **Yinglei C**, Sihan L, et al. "Dynamic Slip Casting - An Efficient Robotic Approach to Geometrically Variable Ceramic Part Production." ACADIA 2023: Habits of the Anthropocene: Scarcity and Abundance in a Post-Material Economy. Proceedings of the 43rd Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA).
- Jie W, Wanting Q, **Yinglei C**, et al. "Parameterization Generation Optimization Design Method for Initial Stage of Green Residential Area Design Scheme." Invention Patent. (Under review, In Chinese).

AWARDS & HONORS

- 2023 ACADIA Student Scholarship ((Awarded to 10 student-presenters.)
- 2023 Robotics and Autonomous Systems Program Prize in Robotic Design
- 2020 Scholarship for Science and Technology Excellence, Guangxi University
- 2020, 2019, 2018, 2017 Second-class Scholarship for Academics Excellence (Top 15%),
- 2020 Yuanye Awards Competition for International College Students Design, Second prize of Urban Renewal category, Team Leader
- 2018 National Undergraduate Training Program for Innovation and Entrepreneurship Scholarship
- 2017 Dean's List Award, Guangxi University (Awarded to Top 2%)
- 2016 First-class Scholarship for Academics Excellence at school (Top 5%)

LEADERSHIP & VOLUNTEER

2016.6-2017.6 **Student Union Chairman**

Guangxi University

- Oversaw 11 student union departments comprising 210 members; orchestrated and directed more than 10 significant events ranging from galas and celebrations to sports competitions.
- Played a pivotal role in organizing the "Belt and Road" Homeland Trip for Overseas Chinese Youth, accommodating 200 participants from 16 diverse countries.
- Secured a top position by clinching first place in Guangxi University's "Top Ten College Councils" selection.

2016.6-2017.6 **Volunteer | National volunteer service of "Caring for young girls"**

Health Commission of Guangxi Zhuang Autonomous Region

- Surveyed the overall situation of village level economic and social development, population and family planning, rural social changes, and the status quo of gender inequality in rural areas.

SKILLS

- **Programming Languages:** Python, Java, C# (Unity)
- **3D & 2D Modelling:** Rhino, Grasshopper, AutoCAD, Unity, Revit, Maya, 3DS Max
- **Graphic & Video:** Photoshop, InDesign, Premier Pro, Illustrator, Keyshot, Lumion, V-Ray
- **Fabrication:** CNC Machine, 3D Printing, Laser Cutting, Arduino
- **Languages:** English (Fluent), Mandarin (Native), Cantonese (Fluent)