

# Guo Zicheng

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📍 Tianjin, China

🌐 Welcome to visit my homepage: <https://guo-zicheng.github.io/Portfolio/>

## EDUCATION

### Tianjin University (TJU), China

Urban and Rural Planning, School of Architecture

09/2019-07/2024 (expected)

- GPA: 87.49/100 (pending)
- Core Courses:
  - (1) Urban Planning and Design (1~4): 88 (avg)      (2) Practice of Design Software: 94
  - (3) Principles of Urban Planning (1&2): 93 (avg)      (4) Digital Analysis and Calculation: 89
  - (5) Geographic Information System and Smart Planning: 94

### (EXCHANGE) Polytechnic University of Catalonia (UPC), Spain

School of Building Construction

09/2023-01/2024 (expected)

- Core Courses:
  - (1) Smart Cities    (2) Urban and Regional Analysis and Planning    (3) the Rules of Urban Form

## INTERNSHIP

### Tianjin Province Urban Planning and Design Institute

Assistant Rural Planner

09/2023-11/2023

- Recognized the outlines and heights of rural buildings automatically based on HRRS images utilizing Mapflow plugin within QGIS.
- Optimized the layout of rural settlement points based on ARSA multi-agent model and spatial gravity model within NetLogo.
- Optimized the layout of infrastructure facility points based on accessibility analysis utilizing UNA Toolbox (by City Form Lab) within ArcGIS.
- Collaboratively created land-use database by ArcGIS, and calculated various indicators such as agricultural, ecological, and construction spatial attributes.
- Independently created key drawings of Changpu Town by ArcGIS, including land-use plan, site plan, transportation route plan, infrastructure facilities plan, etc.

## CURRICULAR

### 1. Quantitative Analysis and Perception Correlation of Building Color

06/2023

- Conducted segmentation on street-view images (model: FCN, training set: ADE\_20K), extracted main colors of building sections, calculated color richness and coordination.
- Quantified 4 types of emotional perception based on machine learning (model: DCNN, training set: UrbanComp) and evaluated their correlations with color richness and coordination.

### 2. Urban Micro-Renewal Strategies Based on 'Wind-Solar-Thermal' Simulation

05/2023

- Simulated sunlight & shadow, wind environment, and solar radiation utilizing Ladybug, Butterfly and Honeybee plugin within Grasshopper.
- Classified 4-level micro-climatic zones based on the UTCI standard, and proposed micro-renewal strategies with different focuses in correspondence.

### 3. Urban Informal Green Spaces (IGS) Renewal Strategies Based on Deep Learning

12/2022

- Recognized IGS based on machine learning for HRRS images (model: DeepLabV3+, training set: BCL) and street-view images (model: MobileNetV2, training set: self-trained).
- Assessed renewal suitability based on capturable value, and determined renewal timing.
- Assessed micro-climate supply-demand alignment, and determined renewal direction.
- Assessed accessibility supply-demand alignment through 2SFCA, and determined renewal intensity.

#### 4. Zoning Plan and Generative Design: Image Perception and Spatial Morphology 11/2022

- Determined renovation and demolition analysis, and zoning plan based on spatial morphology features such as street-network configuration, building density and types, land use, and functional mixture.
- Auto-generated, multi-evaluated, and optimized design proposal of demolition blocks based on the UrbanXTool plugin in Grasshopper.
- Quantified six types of emotional perception based on machine learning (model: DCNN, training set: UrbanComp) and optimized the built environment of renovated blocks.

#### 5. Where Wishes All Come True: A Journey In Wonderland 07/2023

- Urban Renewal Design Based on Multi-sensory Exploration and Hydro-Urban Interplay

#### 6. Boundless Creative Bay Linking City to Yangtze 07/2022

- Urban Renewal Design Based on Human-water Co-habitat and Factory-port Continuation

### ———— HONOURS&AWARDS

#### **Architectural Society of China**

Student Member 11/2023

#### **National University Student Contest on Urban Planning and Design**

National 3rd Award 09/2023

### ———— EXTRACURRICULAR

#### **Student Union of Architecture Faculty**

Vice-President 2020-2021

- Organized and participated in the "4th National Architecture Student Leadership Forum".
- Planned and organized the "Architecture Faculty Basketball Tournament", and served as a referee.

#### **"Voice of TJU" Campus Radio Station**

Station Director 2020-2021

- Served as a host at TJU New Year's Eve Celebration.
- Took responsibility for scriptwriting and broadcasting work for the Campus News Channel.

#### **"Architecture Dreams" Summer Camp Activity**

Teaching Assistant 2021

#### **"Communities Anti-COVID-19 War" National Initiative**

Outstanding Volunteer 2020

### ———— SKILLS

- Language: IELTS-6.5
- GIS: **ArcGIS**, **QGIS**, WebGIS
- Data: **Python**, **SPSS**, R
- Design: **Rhino**, **Grasshopper**, CAD, Sketchup
- Graphic: ECharts, Photoshop, StableDiffusion