

An architectural rendering of a modern building with a circular plaza and floating geometric structures. The building has multiple levels with large glass windows, and the plaza is filled with people. Several large, dark, geometric, cage-like structures are suspended in the air above the plaza. The background shows a city skyline and a body of water.

# AI as a Daily Reading and Poster Design Partner

28 Nov 2024

Lok Hang Cheung (Henrik) | Design School

## Part 1: AI as a reading partner

daily efficient literature searching and reading


[BOOK] **Machine learning: architecture in the age of artificial intelligence**  
P Bernstein - 2022 - [taylorfrancis.com](#)  
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but some of the most fundamental aspects of human **intelligence** have proven more elusive...  
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for screening

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Parastoo Samadi ✉, Sepideh Sedghimehr, Shirin Shevidi & Ali Andaji Garmaroodi

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### Abstract

This paper introduces a computational framework driven by a generative algorithm that allows both architects and non-experts to create various floorplan layouts for predefined residential unit boundaries. This generative tool, implemented in GhPython and Grasshopper, enables users to customize floor plans by defining specific area requirements, accommodating diverse user preferences and facilitate the design process. Also, a catalog of module-based slices containing different functional spaces with determined dimensions have been designed as a reference for the algorithm to generate the final layouts. The generative algorithm, which uses numerical data from each slice, produces floorplan configurations based on the adjacency of functional spaces and user-defined parameters. The bottom-up approach of the algorithm means that the results are noticeably influenced by the designed slices. With the intention of providing the users with a more intuitive understanding of housing layouts, the generated floorplans are presented as furnished 3D models, clustered under specific categories.

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Frequent  
translations needed

Summary of the paper

20240216 5iGraDi23...  
480.25KB

这篇论文探讨了将大型语言模型（LLM）作为建筑设计过程中的设计伙伴，而不仅仅是一个被动的问题回答机器。通过结合对话理论（CT）和LLM，提出了一种新的设计框架，旨在通过口头和非口头反馈与设计师进行持续的对话，并通过收集对话数据进行微调，逐步提高对话的有效性。

- 背景与研究框架：
  - 当今AI的流行及其对设计学科的影响：强调了技术应用的现实世界背景的重要性，指出了计算技术的滥用可能导致设计学科中的不期望后果。
  - 对话作为人机交互的重点：介绍了控制论的起源及其在人机交互中的应用，强调了对话在设计环境中的重要性。
  - 大型语言模型（LLMs）的潜力：讨论了LLMs在自然语言处理（NLP）中的应用及其通过迁移学习成为领域专家的能力。
- 模拟场景：
  - CT和LLM在设计场景中的整合：受MusicColour和URBAN5的启发，提出了将CT和LLM整合到建筑设计场景中的实验。
  - 方法和Rhino-Grasshopper实现：使用Rhino和Grasshopper进行模拟，收集设计行为和脑电波数据，并将其发送给LLM进行处理和反馈。
  - 步骤一：设置环境：包括安装脑电波传感器和初始算法设置。
  - 步骤二：收集数据：收集设计师的行为数据和心理状态数据。
  - 步骤三：将数据编译到LLM：将收集的数据编译成段提供LLM处理。
  - 步骤四：将响应转换为反馈：将LLM的响应转换为口头和非口头反馈。
- Mark I原型发现：
  - 发现：口头反馈提供了直接明确的句子，但存在不一致性和干扰问题。
  - 反思和改进建议：提出了通过手动干预机制和强化学习来改进LLM的响应一致性和减少干扰。
- 讨论：
  - 结论和贡献：展示了LLM在建筑设计场景中的实际应用潜力，但也指出了概念和技术上的挑战。
  - 未来研究方向：包括从一对一场景扩展到多对多场景，以及探索声音、温度等其他空间特质的反馈。
- 感谢：

Too-generic  
AI summary

## Part 1: AI as a reading partner (1/3)


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## Part 1: AI as a reading partner (2/3)

### Frequent translations needed

Home > Nexus Network Journal > Article

# A Generative Framework for Designing Linear-Modular Housing Integrated with a Real-Time User Interface

ESI学科分类: 数学 简介

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Research | Published: 11 November 2024

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[Parastoo Samadi](#) [Sepideh Sedghimehr](#), [Shirin Shevidi](#) & [Ali Andaji Garmaroodi](#)

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## Abstract

This paper introduces a computational framework driven by a generative algorithm that allows both architects and non-experts to create various floorplan layouts for predefined residential unit boundaries. This generative tool, implemented in GhPython and Grasshopper, enables users to customize floor plans by defining specific area requirements, accommodating diverse user preferences and facilitate the design process. Also, a catalog of module-based slices containing different functional spaces with

With [KimiExplorer](#) plugin

Home > Nexus Network Journal > Article

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解释

这段话介绍了一篇论文中提出的一个计算框架，这个框架是由一个生成算法驱动的，它允许建筑师和非专业人士为预定义的住宅单元边界创建各种平面图布局。这个生成工具在GhPython和Grasshopper中实现，使用户能够通过定义特定的面积要求来定制平面图，满足不同的用户偏好，并促进设计过程。此外，还设计了一个基于模块的切片目录，其中包含具有确定尺寸的不同功能空间，作为算法生成最终布局的参考。生成算法使用每个切片的数值数据，根据功能空间的邻接性和用户定义的参数产生平面图配置。算法的自下而上的方法意味着结果明显受到设计切片的影响。为了使用户更直观地理解住房布局，生成的平面图以布置好的3D模型的形式呈现，并归类在特定的

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Immediate translation and Q&A

Too-generic AI summary

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Deep-reading function

AI搜索

深度阅读

AI写作

AI画图

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## Too-generic AI summary

### 5. 致谢:

实验设计包括以下三个阶段：

## Deep-reading function

More specific for literature review



## Part 2: AI as a poster and banner design partner





## Part 2: AI as a poster and banner design partner

### Software used:

AI-image generation, expansion: [Fooocus](#) (locally installed)

AI-image enlargement: [Fooocus](#) (locally installed) / [HiPictureAmplifier](#) 嗨格式图片无损放大器 (paid)

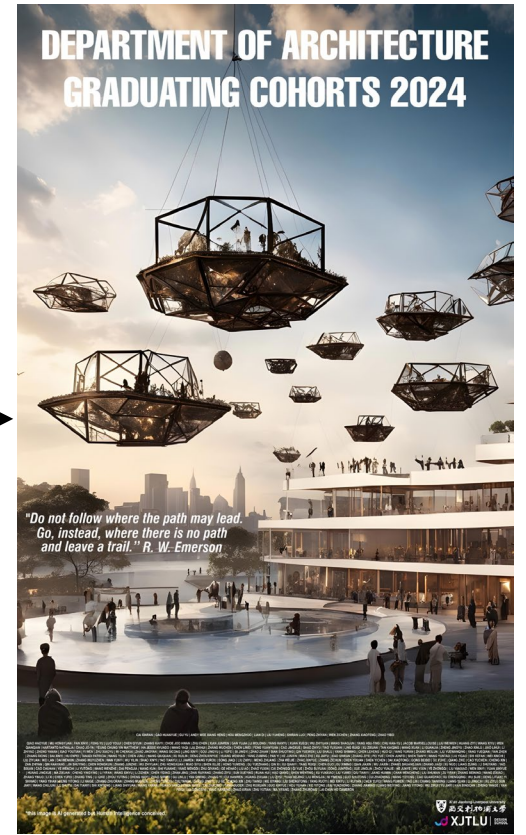
Image editing: Adobe Illustrator / Photoshop



AI-generated



AI-expansion



AI-enlarge, edit



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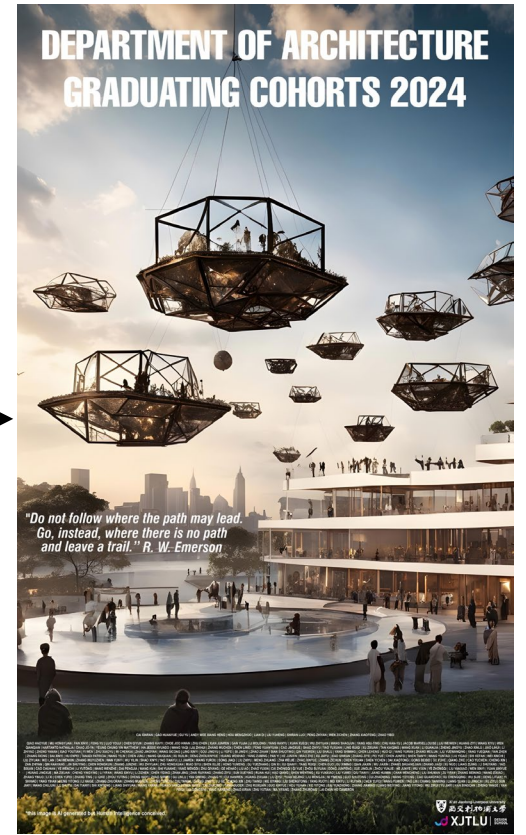
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AI-generated



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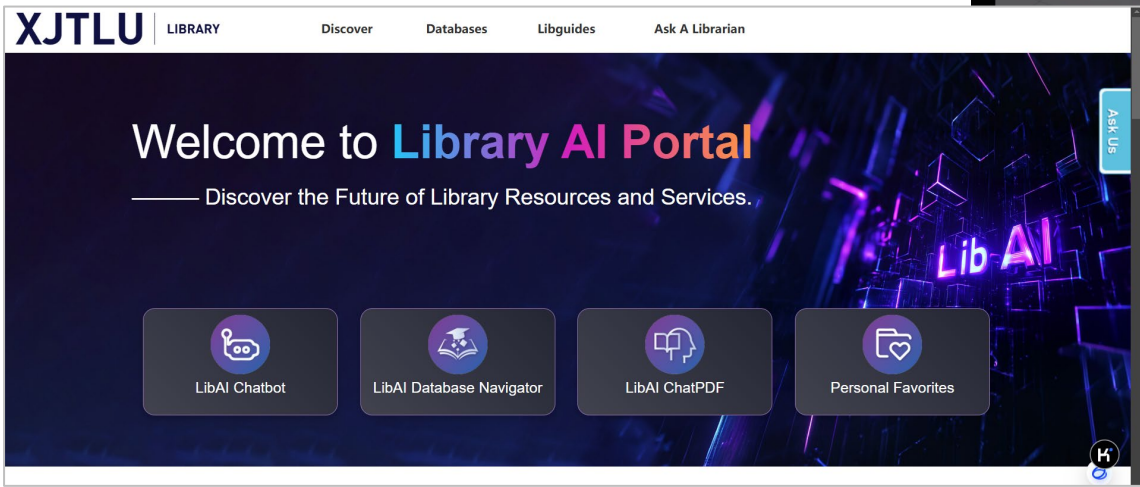
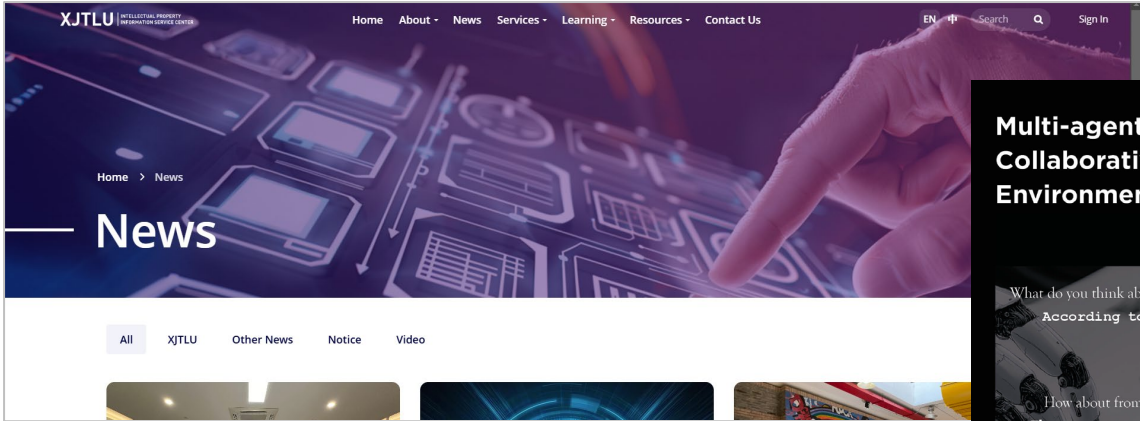


AI-enlarge, edit



# Part 2: AI as a poster and banner design partner

## fast poster and banner design



# Summary

- **Part 1: AI as a reading partner**

- Aim: demonstrates how AI and other on-hand tools help in daily efficient literature searching and reading
  - a) **A browser plugin for searching and identifying journal levels**
    - Tool: [easyScholar](#)
  - b) **A browser plugin for real-time translating and Q&A abstract**
    - Tool: [Kimi Explorer](#)
    - Alternative: [Zhipu Extension](#)
  - c) **A web-based AI application for quick-reading literature**
    - Tool: [Tencent Yuanbao](#)(腾讯元宝)
    - Alternative: [ChatDoc](#)

- **Part 2: AI as a poster and banner design partner**

- Aim: demonstrate how AI and other tools help in fast poster and banner design
  - a) **AI image generation**
    - Tool: [Fooocus](#) (local)
    - Alternatives: [Zhipu](#), [HuluAI](#) (Paid)
  - b) **Image editing (expanding, enlarging)**
    - Tool: [Fooocus](#) (local), [HiPictureAmplifier](#), Adobe Illustrator
    - Alternatives: [InvokeAI](#) (local), Midjourney, DALLÉ-3, Adobe Photoshop
  - c) **Adding texts and touch-up**
    - Tool: Adobe Illustrator
    - Alternatives: Adobe Photoshop / any image editing software





An architectural rendering of a modern building with a circular plaza and floating geometric pods. The building has multiple levels with large glass windows, showing people inside. In front of the building is a circular plaza with a fountain in the center. Several large, geometric, wireframe pods are suspended in the air above the plaza. The scene is set against a backdrop of a city skyline and trees.

# Thank you

Lok Hang Cheung (Henrik)

<https://henrikclh.com/2024/11/27/AI.html>