

Where
C3.87/88
Canavee

Architecture & AI

About

How can AI impact architecture concretely?

1. Presentation: addressing fundamental questions through a review of AI tools: Since the advent of ChatGPT, Artificial Intelligence (AI), especially in its latest incarnation as Generative AI, features prominently in the news, triggering both fears and fascinations. But what is it changing already today for our work as architects? What will be possible in the near future? To start answering these questions and demystifying the concept of AI, we will walk through a series of already available concrete applications which have the potential to be useful for architects – from image generation to cost estimation through floor plan analysis. Along the discussion of the current performance and limitations of these tools we will introduce some more fundamental issues, with the aim of getting a sense of the direction in which AI is evolving and, ultimately, helping us make the best use of it.

2. Hands-on experience of machine vision and creativity: We will investigate together the potential of recent AI systems and techniques, growing familiarity with them. Among the numerous possible applications presented in the first part, will we focus on two of them, namely machine vision on the one hand and image generation as an illustration of machine creativity on the other hand – both having proved to be two sides of the same coin, as we will see.

2.1. Image perception by AI: from sight to insight: What does AI understand about architecture? More precisely, how far is it able to process visual data representing architecture? We will investigate the perception by ChatGPT Vision of drawings and photographs depicting famous buildings from the History of Architecture, experiencing how far AI can derive insights from 'seeing' images.

2.2. How does AI imagine architecture?: Can AI be creative? Can it produce meaningful representations of architecture? How do the meanings of architectural elements and different stylistic features coalesce in AI-generated images? We will synthesize new images of architectures as well as transform existing images using advanced techniques based on open-source text-to-image AI-models like Stable Diffusion.

3. Discussion: We will share the reactions and insights gathered along the day to spark a discussion among the workshop participants.

"We can only see a short distance ahead, but we can see plenty there that needs to be done" - Alan Turing, Computing Machinery and Intelligence, 1950)

Schedule

09:15 – 09:30 | Introduction

09:30 – 10:45 | Presentations

Can AI 'think' Architecture?

Strategies for Design with AI

Case Study: Palazzo Turconi

10:45 – 11:00 | Short break

11:00 – 12:00 | Tutorial: getting started with ComfyUI

12:00 – 12:45 | Lunch break

12:45 – 16:00 | Hands-on work

16:00 – 16:30 | Discussion / Feedback

Team



Pierre Chèvremont
Itten+Brechbühl AG



Lidor Gilad
Itten+Brechbühl AG



Stefano Hu
Itten+Brechbühl AG



Andrea Suardi
Itten+Brechbühl AG

