Chair of Urban Development
School of Engineering and Design
Technical University of Munich

IdP Project Proposal – Summer Semester 2025

Architectural-Urban Futures: Setting-up a database of visual representations of urban spatial projects

Over the past thirty years there has been a revolution in digital tools available to architects for design and representation. Currently, the widespread use of design suites – including CADs, Adobe, Maya, and the gaming software Unreal Engine – are facilitating the production of a globalised aesthetic of digital representations of imagined urban spatial projects. Despite the prominence of such representations in online and offline media, at present we do not know a great deal about the 'how and why' of these representations. The compilation and analysis of a large dataset of relevant projects and their representations could fill this gap.

The task of this IdP is to design and test a process for assembling and analyzing a large dataset of case study projects of architectural-urban futures (1995-2025) as well as their digital representations. All collected data pertaining to the projects should be systematically structured and formalized, enabling the development of a database designed to facilitate future analysis. The metadata should be structured using keys and values in machine readable formats that are then findable by crawlers and other digital tools.

Tasks:

1. The student(s) will develop the technical parameters for the database such that in a subsequent step a research team could:
    - extend the number of projects in the dataset
    - research each project documenting additional information such as the key actors involved, location, size, typology, time (year of inception, publication and possibly discontinuation)
    - undertake a visual discourse analysis and quantitative text analysis of materials associated with each project
2. As a proof of concept, the student(s) will assemble small dataset (50 projects) by identifying digitally represented architectural-urban projects that were communicated in public discourse, to the extent that they were reported about in one or more of *Süddeutsche Zeitung; The Guardian; The Financial Times;* and *The New York Times* (all of these newspapers have stable searchable archives). Alternatively the student can use a WebCrawler to identify such projects.
3. For each identified project the student(s) will scrape social media to identify online materials with which a project is represented, e.g. visualizations, texts, videos.

The idea of the database is to develop a taxonomy of digital visual representations, that is, a system or classification that organizes the materials into categories based on shared characteristics or themes, predominant content, style, sentiment and aesthetic.

The project is exploratory in nature, and ideas from informatics students are highly appreciated in the process. For example:

- Using AI to analyze the content of images through image labels and object recognition
- Explore, adapt and or develop tools for sentiment analysis of the visual and textual materials
- Use natural language processing and sentiment analysis for textual and visual materials

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Previous papers published with IdP students based on their work:

ALAILY-MATTAR, N., BAPTIST, V., LEGNER, L., ARVANITAKIS, D. & THIERSTEIN, A. 2024. Visuality peaks, function lasts: an empirical investigation into the performance of iconic architecture on Instagram. *Archnet-IJAR: International Journal of Architectural Research,* ahead-of-print.

ALAILY-MATTAR, N., ARVANITAKIS, D., VORDEMANN, L. & THIERSTEIN, A. 2022. From exceptional architecture to city icons? Analyzing data scraped from Flickr · 16. Measuring the City: The Power of Urban Metrics. *Projections*, *16. Measuring the City: The Power of Urban Metrics,* MIT Press.

ALAILY-MATTAR, N., ARVANITAKIS, D., KROHBERGER, H., LEGNER, L. F. & THIERSTEIN, A. 2023. The performance of exceptional public buildings on social media–The case of Depot Boijmans. *PLOS ONE,* 18, e0282299.