

Information Architecture



Mondays 10:00 – 12:00
051-0726-15 U | 2 ECTS*

Creative Data Mining Intuitively Analysing Design Ideas

It is increasingly important to know how to work with big amounts of data - especially in such highly complex fields like architecture and urban planning. This knowledge is necessary for comparing different design variations with each other or to compare design sketches to existing architecture. Thus participants will learn how to create whole landscapes of designs in a semi-automatic manner.

At first the lectures and exercises will address the topic of how to automatically create a good overview when multiple design alternatives are given. This seminar will start with introducing the technique of classification as powerful way of sorting all kinds of things. The first few lessons will shed a light on the math underneath and the easiest ways of applying it. Therefore we will present a special workflow of scanning selfmade design sketches and handmade heatmaps to automatically create collages out of it. This allows to find similarities in different designs or built environments and further to tag those automatically.

In a second block, the participants will use the presented method to work on a small project on their own. They will deepen their knowledge in how to automatically compare multiple design alternatives and how to interpret the results for enriching their concepts. This block is interwoven with lessons regarding additional usecases, data acquisition and theoretical discussions. Finally the participants should be able to decide which of the big amount of data available is worth considering in their designs and how to do it.

Room & Timeslot:

HIT H12 on Mondays from 10:00 to 12:00

Supervision:

Matthias Standfest

standfest@arch.ethz.ch

Artem Chirkin

chirkin@arch.ethz.ch

Prof. Dr. Gerhard Schmitt
Chair of Information Architecture
Information Science Lab HIT H32.3
Wolfgang-Pauli-Strasse 27, 8093 Zürich
www.ia.arch.ethz.ch

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| 16.02.2015 | Introduction to Classification What is it good for and how is it used. The pizza example. |
| 23.02.2015 | Introduction to the Environment Including R Studio in your digital toolchain. The AI example. |
| 02.03.2015 | The Math underneath The Simplicity of Machine Learning. The Flower example. |
| 09.03.2015 | Automatic Collage The Sketch-Scan-Render Workflow. The buildingblock example. |
| 16.03.2015 | Seminar week (No lecture) |
| 23.03.2015 | Kick-Off Project Work Brainstorming, Discussion and Roadmap. |
| 30.03.2015 | Applied Classification Algorithms, Data and Usecases. Student project. |
| 20.04.2015 | Workshop I - Analysis Finishing the first half of the student project. |
| 27.04.2015 | Urban Sensing and Simulation Automatic data acquisition and Urban Hacking. Project work Q&A. |
| 04.05.2015 | Workshop II - Interpretation Finalising the individual project work. |
| 11.05.2015 | Final iA critique Combined critique with the other iA courses |

Requirement

Former knowledge of any digital tool or coding language is most welcome but NOT required at all. You only need to provide a reasonable amount of motivation and of course a notebook.

* Total 60 h = 2 ECTS

Exercises 25% (documentations)

Presentation 25% (project at the end)

Written documentation 50% (project)

The most recent outline will be found on www.ia.arch.ethz.ch