Creative Data Mining: Uncover and Evaluate

Mondays 10:00 - 12:00 051-0726-17U 2 ECTS*

Creative Data Mining Uncover and Evaluate

The participants of this course learn how to collect, process, analyze and interpret real spatial and temporal data in order to work with quantifiable qualities in urban planning. This is achieved by using actual data from a recent study and analysing it with different data processing and machine learning techniques.

The goal of the course is to explore a specific research question about the urban environment and test the stated hypothesis using different techniques presented in the course, thus preparing students with a skill-set to further support their design and decision making processes.

The course focuses on creating deeper insights to critically evaluate design alternatives for urban planning projects. Students will work with time-series and geo-referenced data including temperature, relative humidity, illuminance, noise, people density, and dust particulate matter. Subjective impression survey data will also be integrated into the student projects to further explore influencing factors of the urban environment on our perceptual experiences. Non-architectural skills the participants can develop during this course are 1) an introduction to programming 2) how

20.02.2017	Course Introduction
27.02.2017	Introduction to Python & Programming I
06.03.2017	Introduction to Python & Programming II
13.03.2017	Data Processing
20.03.2017	Seminar week (No lecture)
27.03.2017	Intro to time-series data analysis
03.04.2017	Time series data analysis ctd. & Machine learning
10.04.2017	Machine learning ctd.
17.04.2017	Holiday (No lecture)
24.04.2017	Programming tutorial applications
01.05.2017	Holiday (No lecture)
08.05.2017	Q&A Feedback Workshop I
15.05.2017	Final iA critique Combined critique with the other iA courses (13:00 - 18:00)

clustering methods like PCA or K-Means could be applied in an

architectural context.

Where HIT H 34.1 (Video Wall)

Supervision

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

* Total 60 h = 2 ECTS **Ungraded Semester Performance**

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

