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POLITECNICO MILANO 1863

INTEGRATING PARTICIPATORY PERCEPTION-MAPPING DATA AND STOCHASTIC IMAGE ANALYSIS FOR URBAN LANDSCAPE ASSESSMENT

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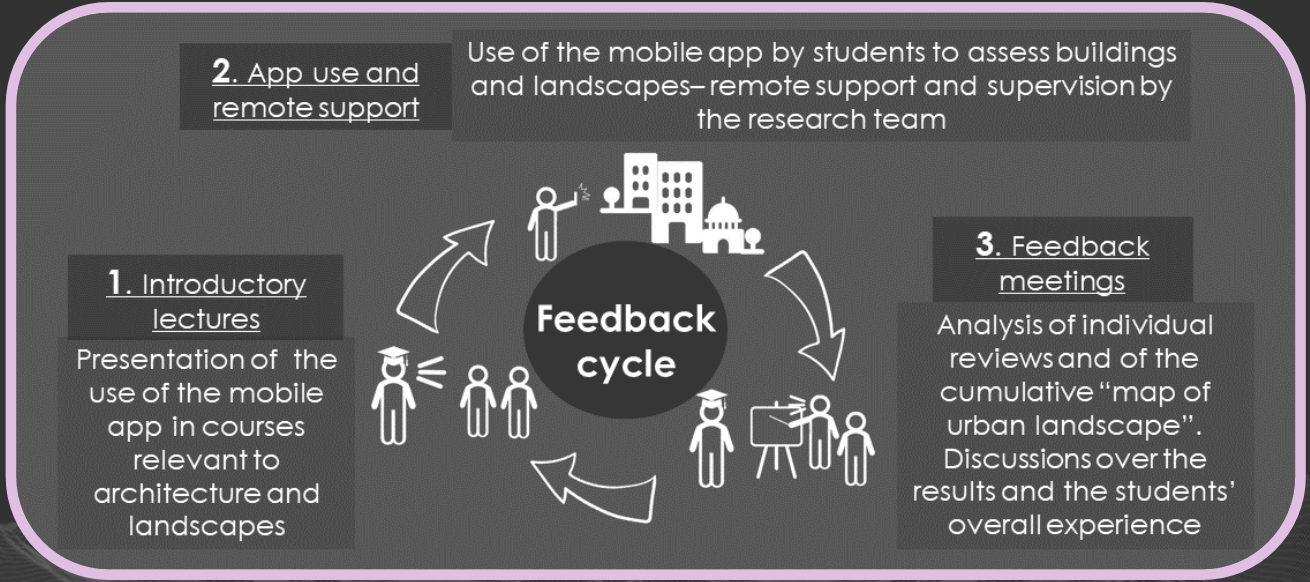


IMAGE SELECTION AND CATEGORIZATION

Out of a dataset of more than 1000 reviews a set of 70 reviews were selected that were the most indicative of 7 major architectural movements which have affected the urban landscape of Italy and Greece (10 images per movement).

CROWDSOUCED

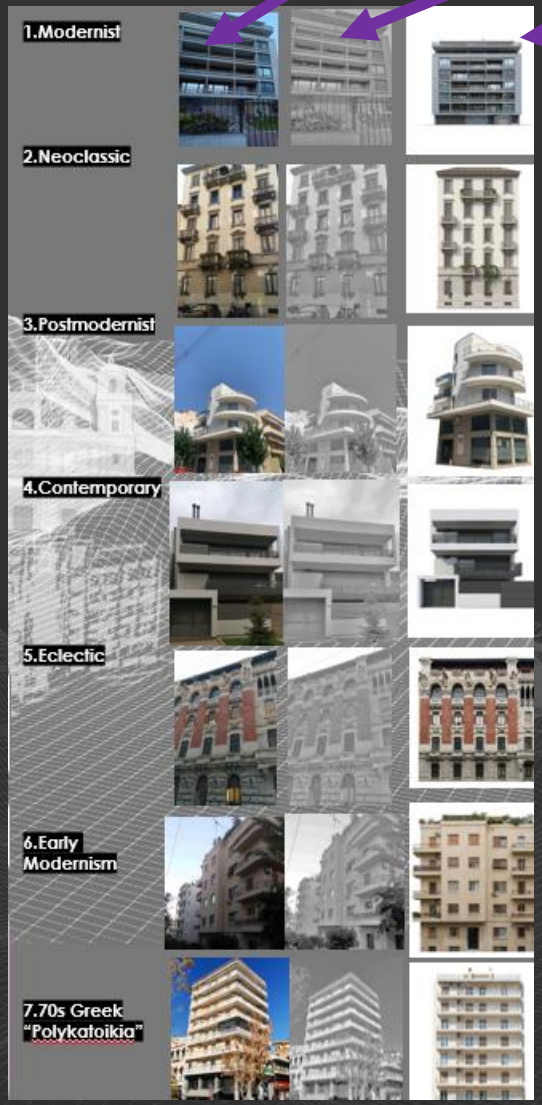
Crowdsourced (raw) images using participants smartphone camera with the project's mobile app

FILTERED

Batch filtering in Adobe photoshop to reduce shadows and highlights and adjust color contrast

AI - PROCESSED

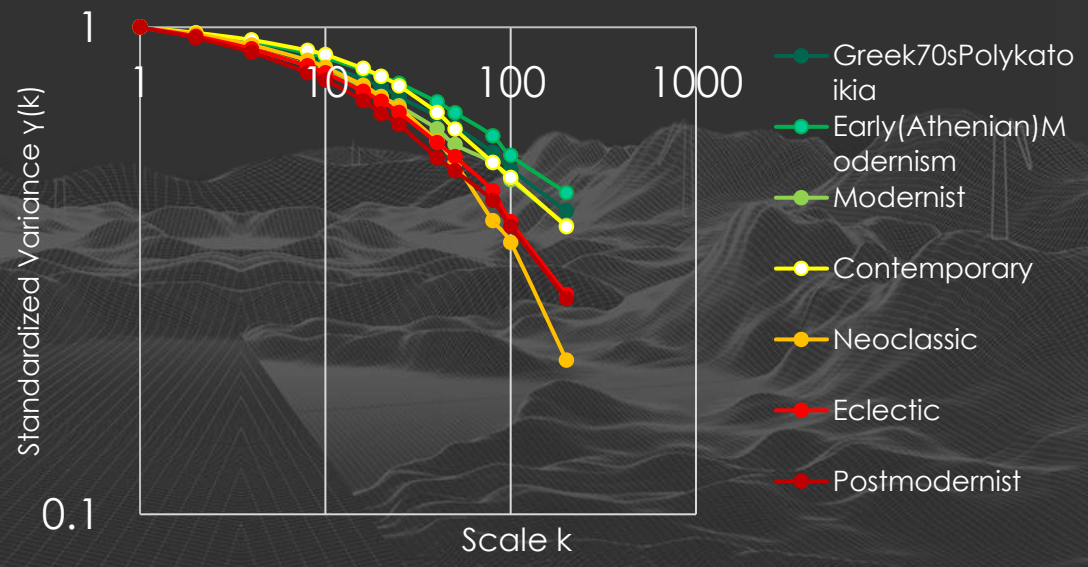
Processed using an LLM model to adjust the image to a frontal view and remove the background



Stochastic 2D-C - Theory

$$\underline{\hat{\gamma}}(\kappa) = \frac{1}{n^2/\kappa^2 - 1} \sum_{i=1}^{n/\kappa} \sum_{j=1}^{n/\kappa} \left(\underline{x}_{i,j}^{(\kappa)} - \underline{\overline{x}} \right)^2$$

Average climacogram per movement



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MAJOR HYPOTHESIS

Strong autocorrelation

Minimal

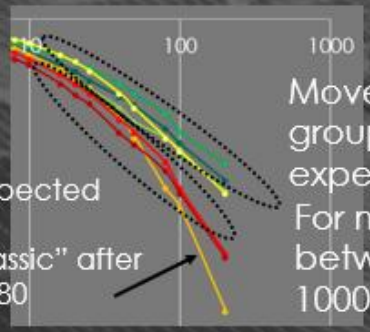
Decoration

Weak autocorrelation

- Greek70sPolykatoikia
- Early(Athenian)Modernism
- Modernist
- Contemporary
- Neoclassic
- Eclectic
- Postmodernist

(1)

CROWDSOURCED (RAW) IMAGES:

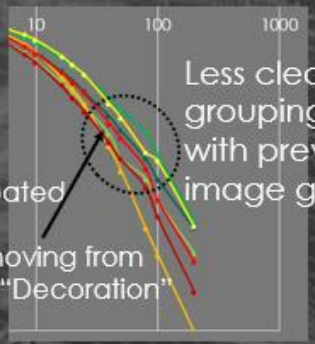


Largest than expected drop in "Neoclassic" after scale ≈ 80

Movement grouping as expected For most scales between 10-1000

(2)

FILTERED IMAGES:

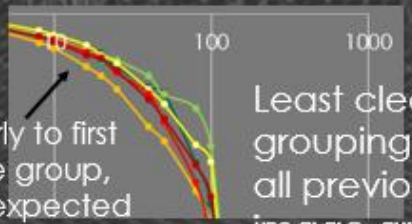


Less clear grouping than with previous image group

Least anticipated Behavior by Modernist, moving from towards the "Decoration" group

(3)

AI PROCESSED IMAGES:



Similarly to first image group, than expected drop in "Neoclassic" but earlier from after scale ≈ 10

Least clear grouping from all previous image groups

Romanos Ioannidis*

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