

Microsoft: DAT210x Programming with Python for Data Science

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Lab: PCA

Lecture: Isomap Quiz

Lab: Isomap

Lecture: Data Cleansing

Quiz

Dive Deeper

Congratulations on making it this far! In the previous module, you directly explored your data using many visualizations. This time you learned how to take complex datasets and simplify them using two popular methods: keeping the most variant set of orthogonal components, and manifold multi-dimensional scaling of your sample's distance map.

After that you learned about a way errors can creep into your dataset and potential methods of handling that. Keep all these techniques fresh in your toolbox by being sure you record some notes about them in the transforming section of your course map. Remember, there is no hard order you must stick to while applying these methods. Try something out, visualize your data, then continue experimenting until you get your desired results.

Below, as usually, we've included some added details about the techniques you just studied in case you're interested in further broadening your knowledge, and taking it to the next level! For instance, regarding the isomap lab, you learned what each parameter does and how isomap works; but one thing you might be wondering from our examples is how *interpolation* between video frames is performed using isomap. You know it's impossible to .inverse_transform() an isomap manifold, so how in the world might you go about interpolating data in your original feature space / dataset? Check below!

PCA

(A)

• Interpreting PCA

016	Further Reading Dive Deeper DAT210x Courseware edX
Dive Deeper	Another Method for Interpreting PCA
	Interactive PCA Demo
• 5. Data Modeling	PCA on Binary Data
	• The Best Explanation of the Math Behind PCA You'll Ever Read
	RandomizedPCA
	Correlation or Covariance?
	Isomap
	The Historic Stanford Isomap Paper, By Josh Tenenbaum
	Lower Dimensional Embedding
	Manifold Learning
	Interpolating Images Between Video Frames Using Non-Linear Dimensionality Reduction
	Cambridge Hand Gesture Data set
	Climate Change within the Continental United States
	NOAA U.S. Climate Divisional Dataset
	• Interactive Discovery Tool For Comparing Raw Historical Data With the 'Enhanced' Data (Flash Based)
	Control Types

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