DIRECTORY



CURRENT STUDENTS FACULTY AND STAFF Search vorku.ca

SITE INDEX

GO

CAMPUS MAPS

FACULTIES

LIBRARIES

- **Home** About the CVR
- **News**
- Members
- Seminar Series
- Conference
- Resources
- **CVR Summer School**
- Research Labs
- Training at the CVR
- Partnering with the CVR
- Contact Us
- Thursday, November 6, 2003 Learning parts

CSE Many collections of data exhibit a common underlying structure: they consist of a number of parts or factors, each with a range of possible states. For example, in a collection of facial images, every image contains eyes, a nose, and a mouth, each of which has a number of appearances. We propose a new method, Multiple Cause

YORK U ORGANIZATION

Vector Quantization, for the unsupervised learning of parts-based representations of data. Our technique automates the segmentation of the data dimensions into parts, while simultaneously learning a discrete model of the range of appearances of each part. We pose MCVQ as a probabilistic graphical model, and derive an efficient and biologically plausible variational-EM algorithm for learning and inference. I will present applications of this model to problems in image decomposition, collaborative filtering, and document modeling

Richard Zemel U of Toronto