

Semester or master thesis

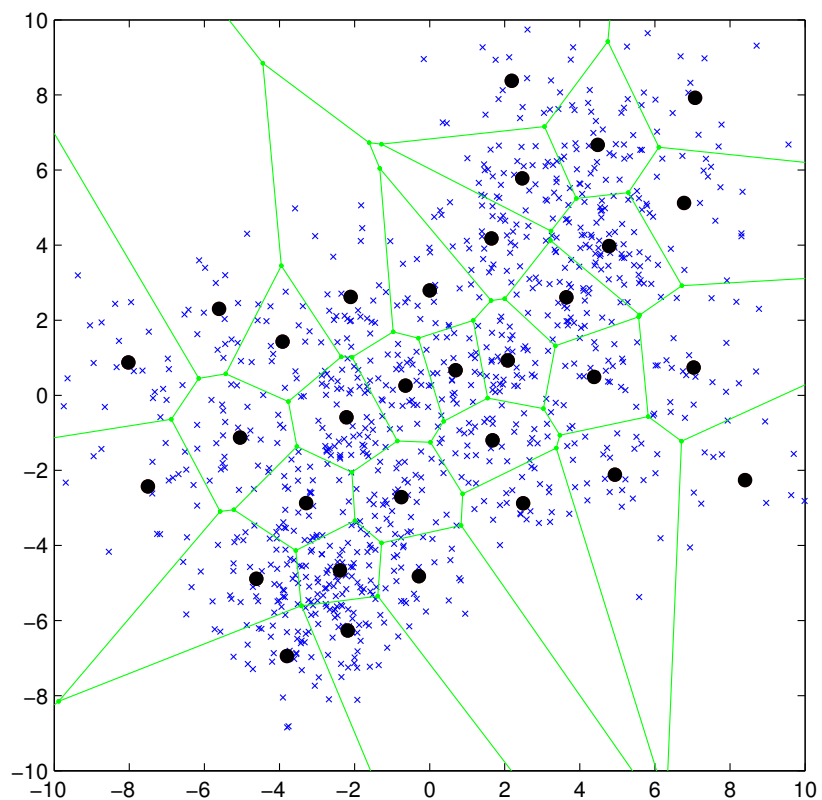
Speech Recognition with Hierarchical Codebook Search

Vector quantization is a widely used technology in speech processing. Well-known applications of this technology are e.g. the speech coding method used in mobile phones or speech recognition. Interested to learn more about this technology?

In this work, you will first of all get known with the techniques of vector quantization. Each vector quantization uses a codebook, i.e. a set of N vectors, the so-called codebook vectors. To encode a vector, it has to be compared with all codebook vectors, and the index of the most similar one is chosen. For large codebooks this comparison (full search) is computationally expensive.

The task of this work is to develop a method to sort a given codebook in such a way that hierarchical (e.g. binary) search can be applied rather than a full search. The suitability of the developed method will be tested in a speech recognizer. The work can entirely be done in Matlab.

The work is suited as a semester or a master thesis for one or two students.



Two-dimensional vector quantization with a codebook of size 32

If you are interested in this topic or you want to know more about the work, please contact:

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