

Diplomarbeit(en)

Merkmale

Titel	Kontrastpyramide mit Graphen
Organisationseinheit	E193 Institut für Visual Computing and Human-Centered Technology
Hauptbetreuung	Kropatsch, Walter; Em.O.Univ.Prof. Dipl.-Ing. Dr.techn. (krw@prip.tuwien.ac.at)
angebotene Sprachen	Deutsch oder Englisch
Schlagwörter	High pass image pyramid on plane graphs / Efficient implementation
Fachgebiet	
angesprochene Studienrichtungen	Informatik

Beschreibung

Contrast pyramids have shown excellent reconstructions for several images of the Berkeley data base with only a few number of high contrasts. The contrast histogram of the image shows the distribution of contrasts and allows to select a bound that limits the mean reconstruction error. A total order of the vertices enables both the ordering of the edges with the same contrast and, together with max-link strategy, generates efficiently the contraction kernels of the pyramid. A spiral total order pushes the surviving vertices geometrically towards the center of the image.

Two recent papers([440,439] at <https://www.prip.tuwien.ac.at/people/krw/more/bibliography.php>) describe several known properties.

The aim of the thesis is to adapt a given python program to run further experiments with both existing image data bases as well as artificial images to prove the correctness of the achieved results.

The results are planned to be submitted to several upcoming conferences and also to journals:

ICPRAI 2026, June 15-18, 2026. Montreal, Canada

ICPR 2026, August 17-22, Lyon, France

S+SSPR 2026, August 24-26, Bern, Schweiz

