

**The deep structure of
Gaussian scale space images**

Colophon

The image of the cover is a photograph by Helma Kuijper of one of her “topological” spatial objects, entitled *untitled*. It was recognised by the author of this thesis as an attempt to popularise the deep structure of Gaussian scale space, and in particular scale space critical curves. He consequently baptised the scene (being the art work), as well as the image (sic!), as *Natural Trees Spanning Artificial Critical Curves*.

This thesis was prepared using the \LaTeX 2_ε typesetting language. The main body of the text was set using a 11-points Times Roman font at A4 paper size. Figures were obtained using Mathematica (a product of Wolfram Research Inc.) and converted to Encapsulated PostScript (registered trademark of Adobe Systems inc.). The final PostScript version was converted to Portable Document Format (PDF), B5 paper size, and transferred to film for printing.

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ISBN 90–393–3061–1

Printed by PrintPartners Ipskamp B.V., Enschede.

The deep structure of Gaussian scale space images

De diepe structuur van Gaussische schaalruimte beelden
(met een samenvatting in het Nederlands)

PROEFSCHRIFT

TER VERKRIJGING VAN DE GRAAD VAN DOCTOR AAN DE UNIVERSITEIT UTRECHT OP
GEZAG VAN DE RECTOR MAGNIFICUS, PROF. DR W.H. GISPEN, INGEVOLGE HET BESLUIT
VAN HET COLLEGE VOOR PROMOTIES IN HET OPENBAAR TE VERDEDIGEN OP MAANDAG
17 JUNI 2002 DES MIDDAGS TE 16.15 UUR

DOOR

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GEBOREN OP 23 DECEMBER 1970, TE ALKMAAR

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The research described in this thesis was carried out at the Image Sciences Institute, Institute of Information and Computing Sciences, Faculty of Mathematics and Computer Science, Utrecht University (Utrecht, the Netherlands), under the auspices of ImagO, the Graduate School for Biomedical Image Sciences.

Financial support for publication of this thesis was kindly provided by ImagO and Utrecht University.

The challenge is to understand the image
really on all the levels simultaneously,
and not as an unrelated set of derived images
at different levels of blurring.

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