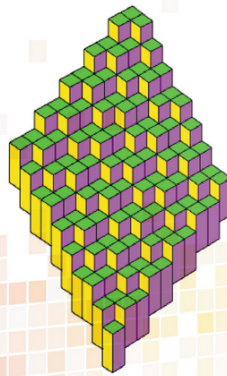


Christer Oscar Kiselman

*Elements of*  
**Digital Geometry,  
Mathematical  
Morphology,  
and Discrete  
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Morphology, and Discrete Optimization

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The author presents three distinct but related branches of science in this book: digital geometry, mathematical morphology, and discrete optimization. They are united by a common mindset as well as by the many applications where they are useful. In addition to being useful, each of these relatively new branches of science is also intellectually challenging.

The book contains a systematic study of inverses of mappings between ordered sets, and so offers a uniquely helpful organization in the approach to several phenomena related to duality.

To prepare the ground for discrete convexity, there are chapters on convexity in real vector spaces in anticipation of the many challenging problems coming up in digital geometry. To prepare for the study of new topologies introduced to serve in discrete spaces, there is also a chapter on classical topology.

The book is intended for general readers with a modest background in mathematics and for advanced undergraduate students as well as beginning graduate students.

### About the Author

**Christer Oscar Kiselman** was born in Stockholm, Sweden, in 1939. He defended his Doctoral Thesis in 1966. In 1968 he was appointed by the King of Sweden, H M Gustaf VI Adolf, to be Associate Professor of Mathematics at Uppsala University, later to be promoted to Full Chaired Professor.

He has advised eighteen persons from seven countries to a Doctoral Degree. Christer has spent one year as a member of the Institute for Advanced Study at Princeton, NJ, being invited by Robert Oppenheimer, and one year at the University of Nice as Guest Professor, being invited by André Martineau.



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