PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A MATHEMATICAL, PHYSICAL & ENGINEERING SCIENCES

Preface to New geometric techniques in computer vision. A Discussion Meeting held at the Royal Society of London.

The Royal Society

Phil. Trans. R. Soc. Lond. A 1998 **356**, 1065
doi: 10.1098/rsta.1998.0209

Preface

This volume records the proceedings of a Royal Society Discussion Meeting on New Geometric Techniques in Computer Vision, which was held at the Society's premises in London on 23–24 July 1997.

The choice of topic was prompted by the recent emergence of geometric methods within computer vision. Since the mid-1980s, projective geometry has provided a new approach to many computer vision problems, leading to improved techniques of object recognition and a better understanding of the geometry of multiple views, particularly as captured by uncalibrated cameras. A combination of differential geometry and motion analysis has yielded new algorithms for determining surface shape from the temporal evolution of image curves, while a fusion of geometry and statistics has resulted in novel methods of tracking image features.

The goal of the meeting was to acquaint researchers with some of these techniques and describe their implementation in working systems. Fourteen papers were presented at the meeting and an audience of about 200 people contributed to the lively discussions that followed each presentation.

The following pages record both the papers and the discussions that ensued, as revised by the contributors. Together they capture the prevailing *Zeitgeist* in this area of computer vision, and we hope that both researchers and students will find the volume a useful introduction to the state of the art.

We thank Kaye Pudney and Clair Emmanuel for their help in preparing the meeting, and those who gave us invaluable assistance in the recording and transcribing of the discussions: David Capel, Antonio Criminisi, Geoff Cross, David Liebowitz, Phil Pritchett, Anthony Lasenby, Tat-Jen Cham and Jun Sato. We are also grateful to the Publications Section of the Royal Society, in particular Emma Dain and Cathy Brennan, for their patience and understanding during the compilation of the papers.

J. Lasenby
A. Zisserman
R. Cipolla
H. C. Longuet-Higgins

PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A MATHEMATICAL, PHYSICAL & ENGINEERING SCIENCES