

# Visual Memory

by

Christopher James Kellogg

Submitted to the Department of Electrical Engineering and Computer Science  
in partial fulfillment of the requirements for the degrees of

Bachelor of Science  
and  
Master of Science in Computer Science

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

May 1993

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JUL 09 1993

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## Abstract

Visual memory supports computer vision applications by efficiently storing and retrieving spatiotemporal information. It is a unique combination of databases, spatial representation and indexing, and temporal representation and indexing. This thesis designs a visual memory architecture that meets the requirements of a number of computer vision applications. It also presents an implementation of part of this design in support of a scene monitoring prototype.

Thesis Supervisor: Alex P. Pentland  
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Thesis Supervisor: Bruce E. Flinchbaugh  
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## Acknowledgements

My primary thanks goes to my two thesis supervisors, Bruce Flinchbaugh at Texas Instruments and Sandy Pentland at MIT. Bruce pointed me to the visual memory project that he was starting and guided my research at Texas Instruments. Sandy provided useful feedback throughout the research stage. They were both very helpful in critiquing the thesis document.

I'd also like to thank the other people at Texas Instruments who helped me with this project. Steve Ford and Tom Bannon were especially helpful in developing the visual memory design. In addition, I don't think I would have survived the bugs in PC++ without Steve's expertise. Tom Bannon and Tom O'Donnell provided a nice tracking system with which to test the visual memory prototype.

Finally, I'd like to thank my family, Fred, Jeannette, and Mark Kellogg, my fiancée Christine Bailey, and my brothers at Phi Kappa Sigma for their support throughout my MIT career.

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