

# 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

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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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