

Candidate Name: Robert Redwood

Candidate Number: 53689

Degree Programme: Computing and Artificial Intelligence

Department: Informatics

Project Title: Reface: Beyond Exhaustive Visual List Search In Facial Composite Construction

Project Supervisor: Richard Cox

Project Submitted: April 2009

Report Summary: This report concerns the construction of facial composite images using psychologically plausible, human centred techniques. It compares and contrasts some existing facial compositing systems and examines in detail the problems with these systems, particularly the issue of exhaustive visual list search. It looks in particular at construction processes which involve picking individual facial features from a list, viewed out of context from a face, with contrast to those which involve viewing variations of whole faces and selecting those more like the target face. It explores a genetically inspired guiding system based on the similarity scoring of feature alternatives to provide the basis for such a face selection process. The report details the development of software which addresses some of the issues discussed, and provides a platform for further research in this domain.

Accompanying Materials: This report has some accompanying materials, as noted in the code appendices. They can be found at:

<http://www.robertredwood.com/reface/index.html>

Statement of Originality: This report is submitted as part requirement for the degree of Computing and Artificial Intelligence at the University of Sussex. It is the product of my own labour except where indicated in the text. The report may be freely copied and distributed provided the source is acknowledged.