



Progress Report Submission for C. J. Taylor

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Agreed Upon

- Experiment further with model-based objective functions. Try the function used by TFC , try a *mixture* of objective functions and analyse the functions' behaviour near convergence by perturbing data points.
- Rough presentation to be given on Thursday afternoon. This session should flare comments that will result in improvements.
- Aim to produce results that are sufficiently useful for a MICCAI 2004 submission
- Literature Report feedback should have an effect on the Continuation Report document.

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Electronic version: <http://www.danielsorogon.com/Webmaster/Research/Progress>

- On Thursday we agreed to rework the contents of the presentation.

P rogress Made

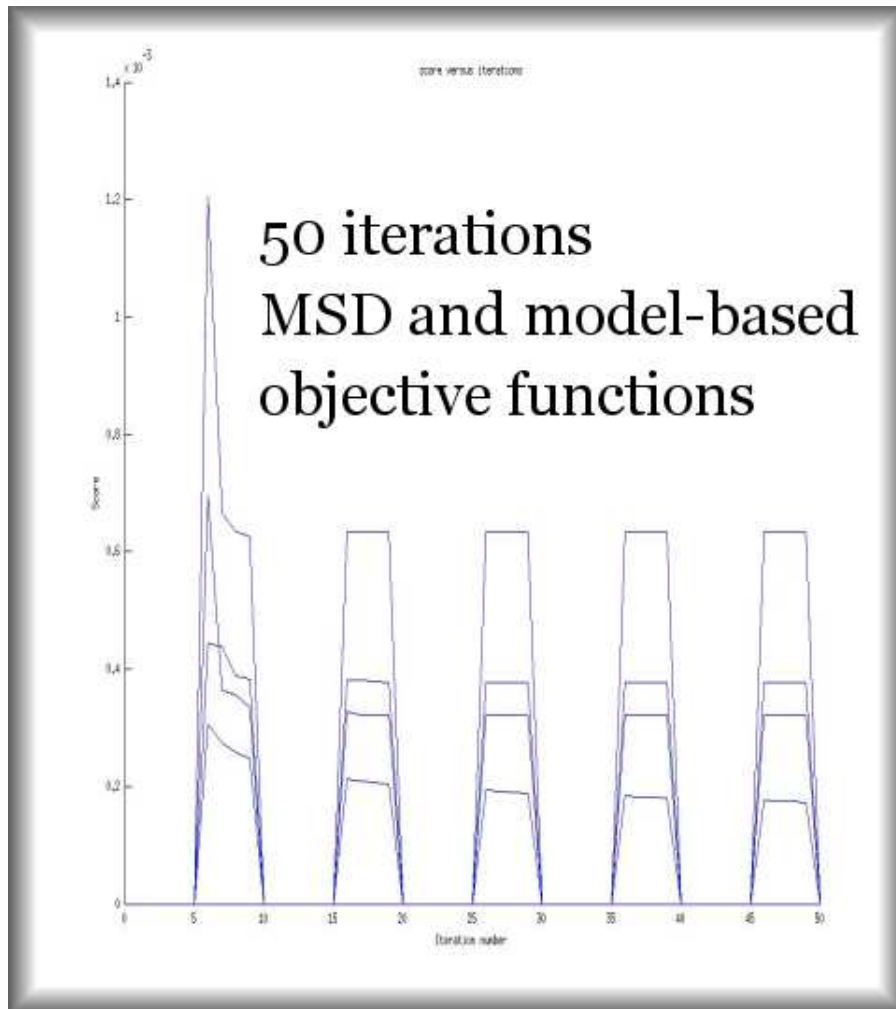
- Continuation Report \LaTeX class constructed and contents of literature report shifted onto that new document. Correction and embellishment according to the annotated paper report is to take place later as it is yet unclear what structure and what requirements the new document is subjected to.
- Meeting of IRC S&F GC on Wednesday. A subsequent meeting with Steve and Carole raised the following (important) argument:

Intensity and shape weighing will make model-based optimisation impossible unless I include some extra terms in the objective function.

- Presentation abstract submitted to Shelagh on Wednesday the 28th of January. Title was submitted too:

Unification of Active Appearance Models and Non-rigid Registration

- The expansion of functionality and improvements made to the GUI front-end are better seen than explained in a “change-log” kind-of style. Below is one of the many experiments performed.



Alternation between a model-based objective function and an MSD-guided optimisation, the first data instance being a reference. Gradual improvements amongst the instances can be seen after each time the model-based objective function is used.

- I named the package I had created AART (*Autonomous Appearance-based Registration Test-bed*) and established a simple logo for it. Vis-a-vis logos, I contacted Jennet regarding the MIAS IRC logo selection, but Derek seems to have found a winner already.
- Important details and issues raised in an earlier meeting with Steve have been put in a separate document. The document is worth having a glance at during one of the future meetings or prior to them.

<http://www.danielsorogon.com/Webmaster/Research/NRR/Marsland>

- Miscellaneous meetings¹ are recorded at:

<http://www.danielsorogon.com/Webmaster/Research/Meetings/>

Next Stage

Implementation

- Critically evaluate MATLAB experiments and results to agree on the next step/s. Find out the differences between the MATLAB code and TFC's C++ implementation which has been more successful.
- Have a look at the suggestions made by Steve. Implementation can benefit greatly from discussions stemming from these notes.
- Consider the implementation prospects of MDL as a metric², especially as a substitute for the determinant of the covariance matrix.
- Run the package to illustrate the difficulties encountered with model-based function.
- Rework the presentation
- See AART in action.

¹All meetings apart from the weekly meetings with the supervisor.

²The package already has a notion of MDL, but it is not yet implemented.