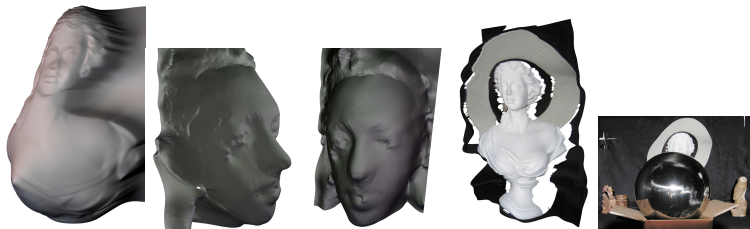# Stuff I think is interesting
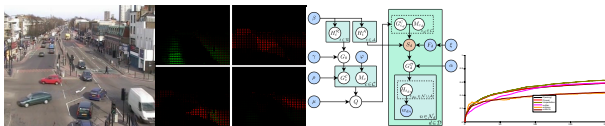
Tom S. F. Haines
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21$^{\text{st}}$ October 2014

- Shape from Shading [SfS], SfS with Stereopsis and Light Source Estimation from Stereopsis.
- Belief propagation: Discrete, Gaussian and with directional statistics (Fisher-Bingham 8 parameter distribution).
- Generalised Hough transform, Bayesian with branch and bound.
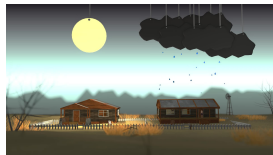
Postdoc at QMUL

- Background subtraction – Streaming Dirichlet process [DP] mixture models.

- Abnormal behaviour detection – Various topic models, inc nonparametric.

- Active learning – DPs, rare class discovery with simultaneous boundary refinement.
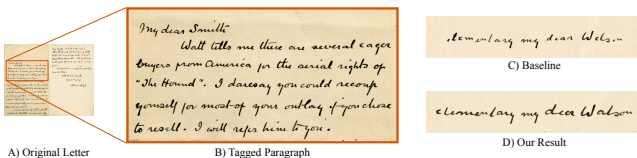
- Director of **3Dami**, an educational non-profit.
- Summer school for college students, runs at UCL.
- Make a 3D animated film in a week with Blender.
- Teach them how - process I know in detail.

Postdoc at UCL

A) Original Letter   B) Tagged Paragraph

C) Baseline

D) Our Result

- Handwriting synthesis – faking (!) specific people.
- Probabilistic camera tracking – avoiding the best-guess dead-reckoning approach of iterated closest point (ICP).

resistance is futile
resistance is futile

- Landscape synthesis. . .
  - Photographs – to indicate desired landscape style.
  - Generative model – many possible instances.
  - User editability – e.g. mountain is in the wrong place.