

# Advanced Computer Vision Course

Contact: 16<sup>th</sup> March – 8<sup>th</sup> May 2009

## Day 1 - Thursday 19<sup>th</sup> March

9.00	Introduction and Review of Course Material including timetable, assessment details, Handouts and instructions/tips for student presentations	(AG)
9.30	Images and Deconvolution	(NT)
10.20	Short break	
10.30	Region-based Segmentation	(NT)
11.20	Short break	
11.30	Edge-based Vision	(NT)
12.30	Lunch	
13.30	Hough Shape detectors	(NT)
14.20	Short break	
14.30	Introduction to Stereo	(NT)
15.30	Lab: Self-study	

## Day 2 – Thursday 26<sup>th</sup> March

9.00	Multiple-choice test	
9.20	Stereo Geometry and calibration	(NT)
10.20	Short break	
10.30	Practical Lab: Manual calibration and volumetric reconstruction	(Shaobo, AG)
11.30	Short break	
11.35	Assessed Laboratory Exercise (Stereo Vision)	(Shaobo, AG)
12.30	Lunch	
13.30	Object recognition with parts (part 1) including corner detection and SIFT	(AG)
14.25	Short Break	
14.35	Object recognition with parts (part 2)	(AG)
15.30	Practical lab: SIFT tutorial	(Shaobo, AG)

## Day 3 - Thursday 23<sup>rd</sup> April

9.00	Model-based Vision (including AAMs)	(AG)
10.50	Practical Lab: EigenFaces tutorial	(Shaobo, AG)
12.30	Lunch	
13.30	Motion analysis (part 1) including visual tracking	(AG)
14.30	Short Break	
14.40	Motion analysis including temporal modelling (part 2)	(AG)
15.40	Short break	
15.50	Motion analysis (part 3) including applications (i.e VLMMs of behaviour etc.)	(AG)

#### **Day 4 - Thursday 30<sup>th</sup> April**

<b>9.00</b>	Discussion and Exercises (NAT) including notes for NAT's lectures.	(NT)
<b>9.50</b>	Short break	
<b>10.0</b>	Statistics and Error Propagation	(NT)
<b>10.50</b>	Short break	
<b>11.00</b>	Stability of Image Processing Algorithms	(NT)
<b>11.35</b>	Short break	
<b>11.45</b>	Exercises in (NAT) Handouts for practical exercises.	(NT)
<b>12.30</b>	Lunch	
<b>13.30</b>	Statistical Foundations of Algorithmic Design.	(NT)
<b>14.20</b>	Short break	
<b>14.30</b>	Exercises in Probability (NAT) Handouts for practical exercises.	(NT)
<b>15.20</b>	Short break	
<b>15.30</b>	Data Fusion	(NT)

#### **Day 5 - Thursday 7<sup>th</sup> May**

<b>9.00</b>	Image Warping	(NT)
<b>9.45</b>	Short break	
<b>9.55</b>	Advanced Linear Operators	(NT)
<b>10.40</b>	Short break	
<b>10.50</b>	Completeness Properties	(NT)
<b>11.35</b>	Short break	
<b>11.45</b>	Visual Intelligence	(NT)
<b>12.30</b>	Lunch	
<b>13.30</b>	Students Deliver Prepared Talks	(AG)