

**Monday 29 April 2019  
9.30 am – 11.30 am  
(Duration: 2 hours)**

**DEGREES OF MSc, MSci, MEng, BEng, BSc, MA and MA (Social Sciences)**

# **COMPUTATIONAL SOCIAL INTELLIGENCE H**

**(Answer all 3 questions.)**

**This examination paper is worth a total of 75 marks**

**The use of a calculator is not permitted in this examination**

## **INSTRUCTIONS TO INVIGILATORS**

**Please collect all exam question papers and exam answer scripts and retain for school to collect. Candidates must not remove exam question papers.**

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1. One of the main approaches for the multimodal analysis of social signals, is the use of a Multiple Classifier System, i.e., a “combination of several classifiers that deal separately with the various modalities” (quoted from A.Vinciarelli and A.Esposito, “Multimodal Analysis of Social Signals”, in “The Handbook of Multimodal-Multisensor Interfaces”, Oviatt et al., eds., 203-226, ACM, 2018).
  - (a) Explain the difference between the two main approaches for the combination of classifiers, namely “early fusion” and “late fusion”.

[15 marks]
  - (b) Explain the most important aspects of the combination of classifiers.

[15 marks]
2. A “judgment study” is an experiment in which “*behaviours, persons, objects or concepts are evaluated by one or more judges, raters, coders or evaluators, referred to collectively as judges*” (quoted from R.Rosenthal, Conducting Judgment Studies: Some Methodological Issues”, in “The New Handbook of Methods in Nonverbal Behavior Research”, J.A.Harrigan, R.Rosenthal and K.R.Scherer, eds.).
  - (a) Explain the most important aspects of judgment studies, including the issues of reliability;

[15 marks]
  - (b) Define 'encoders' and 'decoders' in judgement studies and explain in detail the difference between them.

[15 marks]
3. Explain the most important aspects of one of the four experimental studies that have been presented during the course:
  1. Synthetic impressions;
  2. Speech and Personality;
  3. Facial Expressions;
  4. Nonverbal Behaviour in Phone Calls.

[15 marks]