Space, Time, and Ambient Intelligence (STAMI)

Focus on: *Spatio-Temporal Aspects of Human-Activity Interpretation*

AAAI 2013, Bellevue, Washington, USA

Sunday July 14, 2013

PROGRAMME

STAMI 2013 is a follow-up of previous STAMI initiatives::

– STAMI 2009, at COSIT-09 (France / workshop)

– STAMI 2011, at IJCAI-11 (Spain / workshop)

– Recognising Behaviour in a Spatio-Temporal
Context, at AAAI 2011 (USA / tutorial)

Mehul Bhatt, Hans Guesgen, and Diane Cook

`http://stami.spatialnetwork.org/`

1 STAMI 2013 PROGRAMME

- **09.00 – 9.10**

  STAMI 2013 Introduction

  Mehul Bhatt, Hans W. Guesgen, Diane J. Cook

- **09.10 – 9.30**

  Short presentations, and participant introductions

  All participants

- **09.30 – 10.30** — KEYNOTE 1

  nEmesis: *Which Restaurants Should You Avoid Today?*

  Henry Kautz

- **10.30 – 11.00 — COFFEE BREAK**

- **11.00 – 11.30**

  ROTUNDE: *A Smart Meeting Cinematography Initiative*
  — Tools, Datasets, and Benchmarks for Cognitive Interpretation and Control

  Mehul Bhatt, Jakob Suchan, Christian Freksa

- **11.30 – 12.00**

  Modeling of Activities as Temporal Multivariable Problems

  Farzad Amirjavid, Abdenour Bouzouane, Bruno Bouchard

- **12.00 – 12.30**

  An Approach to Numeric Refinement in Description Logic Learning for Learning Activities Duration in Smart Homes

  An Cong Tran, Hans W. Guesgen, Jens Dietrich, and Stephen Marsland

- **12.30 – 13.30 — LUNCH BREAK**

- **13.30 – 14.00**

  A Fuzzy Set Approach to Representing Spatio-Temporal and Environmental Context: Preliminary Considerations

  Hans W. Guesgen

- **14.00 – 15.00** — KEYNOTE 2

  Learning about Activities and Objects from Video

  Anthony Cohn

- **15.00 – 16.30 — DISCUSSION SESSION (integrated with coffee break)**

- **16.30 – 17.00**

  The Spatial Interaction Laboratory - A Distributed Middleware and Qualitative Representation for Ambient Intelligence

  Jasper van de Ven, Frank Dylla

- **17:00 – 17.30**

  Dynamic Symbol Grounding: Changing Referents in Engineering Analysis and Spatial Environments

  Matthew Klenk and Daniel Bobrow

- **17:30 – 18.00 — DISCUSSION AND CLOSURE**

- **19.00 — DINNER**

2   ABOUT STAMI 2013

A wide-range of applications within the purview of Ambient Intelligence, Smart Environments, Cognitive Assistance Systems, and Pervasive and Ubiquitous Computing require the ability to represent and reason about dynamic spatial phenomena. Systems concerned with observing, interpreting, and interacting in an environment populated by humans and artefacts require a formal means for representing and reasoning with spatio-temporal, event, and action driven phenomena that occur in the environment. The STAMI workshop addresses basic research questions concerned with operationalising "*commonsense situational awareness*" for assistive technologies within the purview of Ambient Intelligence and Smart Environments.

STAMI 2013 has a special focus on the topic of "*Spatio-Temporal Aspects of Human Activity Interpretation*", especially welcoming research concerned with monitoring and interpretation of people interactions, real-time commonsense situational awareness involving aspects such as scene perception and understanding, perceptual data analytics, and prediction & explanation-driven high-level control of autonomous systems. In this context, basic topics deemed important include:

- activity and process models

- behaviour and intention interpretation

- spatial learning

- modelling and reasoning about space, events, actions, interaction

- spatio-temporal dynamics

- commonsense reasoning about spatio-temporal change.

Research contributions have been encouraged to address use-cases from specific application areas of interest as indicated on the STAMI website. Furthermore, we also invited prototypical demonstrations, and initiatives and perspectives on benchmarking and promoting open-access of algorithms and systems from the viewpoint of cognitive vision, interaction, and control.

3   WORKSHOP ORGANIZING COMMITTEE

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4 PROGRAM COMMITTEE

- Bernd Neumann (University of Hamburg, Germany)
- Diane J. Cook (Washington State Uni., United States)
- Francois Portet (Grenoble Institute of Tech., France)
- Frank Dylla (University of Bremen, Germany)
- Hans Guesgen (Massey University, New Zealand)
- Hedda Schmidtke (Carnegie Mellon Uni., Rwanda)
- Juan Carlos Augusto (Middlesex Uni., United Kingdom)
- Joachim Hertzberg (Uni. of Osnabrueck, Germany)
- Kai Kunze (Osaka Prefecture University, Japan)
- Mitja Lustrek (Jozef Stefan Institute, Slovenia)
- Mehul Bhatt (University of Bremen, Germany)
- Nico Van de Weghe (Ghent University, Belgium)
- Philippe Muller (Universite Paul Sabatier, Frane)
- Reinhard Moratz (University of Maine, US)
- Seng Loke (La Trobe University, Australia)
- Stefan Woelfl (University of Freiburg, Germany)
- Yacine Amirat (Universite Paris-Est Creteil, France)

5 INVITED KEYNOTES

In addition to six paper presentations, which will be accompanied by discussions, the workshop features two keynote speakers: *Anthony Cohn* (University of Leeds, UK) and *Henry Kautz* (University of Rochester, US).

Anthony Cohn

Anthony Cohn holds a Personal Chair at the University of Leeds, where he is Professor of Automated Reasoning and served a term as Head of the School of Computing, from August 1999 to July 2004. He is presently Director of the Institute for Artificial Intelligence and Biological Systems. He holds BSc and PhD degrees from the University of Essex, where he studied under Pat Hayes. He spent 10 years at the University of Warwick before moving to Leeds in 1990. He now leads a research group working on Knowledge Representation and Reasoning with a particular focus on qualitative spatial/spatio-temporal reasoning, the best known being the well cited Region Connection Calculus (RCC). His current research interests range from theoretical work on spatial calculi and spatial ontologies, to cognitive vision, modeling spatial information in the hippocampus, and integrating utility data recording the location of underground assets. He has received substantial funding from a variety of sources, including EPSRC, the DTI, DARPA, the European Union and various industrial sources. Work from the Cogvis project won the British Computer Society Machine Intelligence prize in 2004.

Henry Kautz

Henry Kautz is Chair of the Department of Computer Science at the University of Rochester. He performs research in knowledge representation, machine learning, pervasive computing, and assistive technology. His academic degrees include an A.B. in mathematics from Cornell University, an M.A. in Creative Writing from the Johns Hopkins University, an M.Sc. in Computer Science from the University of Toronto, and a Ph.D. in computer science from the University of Rochester. He was a researcher and department head at Bell Labs and AT&T Laboratories until becoming a Professor in the Department of Computer Science and Engineering of the University of Washington in 2000. He joined University of Rochester in 2006. He was President (2010-2012) of the Association for the Advancement of Artificial Intelligence, and is a Fellow of the AAAI, a Fellow of the American Association for the Advancement of Science, a recipient of the IJCAI Computers and Thought Award.