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Modeling and Using Context

10th International and Interdisciplinary Conference, CONTEXT 2017
Paris, France, June 20–23, 2017
Proceedings

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Preface

Context affects virtually all aspects of behavior in animals, humans, and computer systems. It affects how we understand the world, communicate with others, and plan and carry out our actions. It affects how computer systems should behave so that they act appropriately for their situation and their users.

Contextual effects have been studied in many different disciplines over the years, but usually without too much interaction between the researchers in the different fields. This began to change in the mid-1990s, beginning in a small way with a 1993 International Joint Conference on AI workshop in on modeling context in knowledge representation and reasoning, which sought to bring together some of the various threads of context-related research. The interdisciplinary focus on context as a subject of research truly began in 1997, when the First International and Interdisciplinary Conference on Modeling and Using Context, CONTEXT 1997, was held in Rio de Janeiro.

Conferences since the original have been held in Trento, Italy (1999), Dundee, UK (2001), Stanford, California, USA (2003), Paris, France (2005), Roskilde, Denmark (2007), Karlsruhe, Germany (2011), Annecy, France (2013), and Larnaca, Cyprus (2015).

This volume contains the proceedings of the 10th CONTEXT Conference, held in Paris, France, during June 20–23, 2017. CONTEXT 2017 was a very special conference in the series: not only was it the 10th CONTEXT conference, it marked the 20th anniversary of the start of the series and the start of the interdisciplinary community focusing on context-related research.

CONTEXT conferences over the years have showcased papers from some of the leading thinkers on the subject as well as newcomers from fields as diverse as artificial intelligence, philosophy, linguistics, neuroscience, management, and computer applications, and have included world-renowned invited speakers. This year's conference included invited talks from Robert Stalnaker (“Conversational Strategy”), Fausto Giunchiglia (“Personal Context Modelling and Annotations”), and François Récanati (“Indexical Thought”).

CONTEXT 2017 included several workshops that took place on the day prior to the main conference. These were: Context and Philosophy (C. Penco and M. Vignolo, chairs), Context in Management (F. Santoro, K. Revoredo, M. Borges, and J. Canos, chairs), Context in Learning (J. Bourdeau and T. Forissier, chairs), Quality Awareness in Modeling and Using Context in Applications (QAMUCA, S. Chabridon and P. Marie, chairs), and Context in the Explanation of Human Reasoning (M. Sbisand P. Labinaz, chairs).

We took an unusual approach to organization for this conference in which the boundary between workshop papers and main conference (plenary) papers was considerably more fluid than usual. This was done to get the best work presented to the

community, even if that work was not initially considered by the authors to have broad appeal. All submitted papers, including those submitted to the workshops, were reviewed the same way, with the final disposition of the papers decided by the conference chairs in consultation with the workshop chairs. Some papers submitted to workshops, for example, were considered of sufficient merit and broad enough interest to be included in the plenary sessions. A special session of topic tracks included high-quality papers from the workshops that, while perhaps not of broad appeal, were still likely to interest a segment of the general attendees. This also encouraged the workshops to focus less on paper presentation and more on substantive discussions and work.

There were 88 papers submitted to the conference. Of these, 26 were accepted as plenary papers for an acceptance rate of 29%. Additionally, 15 papers were presented as part of the topic tracks sessions, and 15 were presented as posters at a special session in the evening of the first day of the main conference. All plenary, topic track, and poster papers appear in these proceedings.

Many people and organizations contributed to the success of CONTEXT 2017. We would like to thank the invited keynote speakers, the workshop chairs, and the Program Committee members for their efforts, as well the local student-workers at the conference venue. We would also like to thank the Pierre et Marie Curie University for being the setting for the conference, the EasyChair conference management system, and the editors at Springer (and Springer itself) for their help with myriad questions and issues. We would also like to thank the Northwestern Italian Philosophy Consortium (FINO) for their financial support for some of the conference attendees.

This conference was held at a time when other fields had begun to recognize context as a subject of study in its own right, but CONTEXT still remains the premier venue for bringing together researchers from many different fields to share ideas and discuss commonalities. We foresee a need for this kind of forum going forward, and we feel that the future is very promising for many more CONTEXT conferences.

March 2017

Patrick Brézillon
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Invited Speakers

Conversational Strategy

Robert Stalnaker

MIT, Cambridge, USA

The common ground framework represents a discourse context as a body of information that is presumed to be shared by the participants in a conversation. In this talk, I will sketch the general lines of this pragmatic framework, starting with the simple cases where cooperation predominates, but then emphasizing the way contexts evolve in situations in which conflict and disagreement play a central role, particularly in public discourse. The kind of strategic reasoning that game-theoretic concepts are designed to clarify is particularly interesting when common interest mixes with conflict of interest, and I will consider some patterns of strategic reasoning in contentious communicative situations.

Personal Context Modeling and Annotations

Fausto Giunchiglia

University of Trento, Trento, Italy

Current context modelling approaches mostly focus on a priori defined environments, while the majority of human life is in open, and hence complex and unpredictable, environments. We propose a context model where the context is organized according to the different dimensions of the user environment. In addition, we propose the notions of endurants and perdurants as a way to describe how humans aggregate their context depending either on space or time, respectively. To ground our modelling approach in the reality of users, we collaborate with sociology experts in an internal university project aiming at understanding how behavioral patterns of university students in their everyday life affect their academic performance. Our contribution is a methodology for developing annotations general enough to account for human life in open domains and to be consistent with both sensor data and sociological approaches.

Indexical Thought

François Récanati

Centre National de la Recherche Scientifique – CNRS, Paris, France

I will analyse indexical thoughts (e.g. first person thoughts, or demonstrative thoughts) in terms of functional properties of the vehicles through which we think such thoughts. These vehicles I will describe as ‘mental files’, whose role is to store information derived through certain types of contextual relation to objects in the environment. I will argue that mental files are typed by the type of contextual relation they exploit, and in this respect they are like indexicals. In the last part of the talk, if time permits, I will discuss various attempts to account for indexical thinking purely at the level of content, without bringing the vehicles into the picture.

Contents

Keynote-Related Papers

Assertion <i>De Re</i>	3
<i>Gregory Bochner</i>	
Pejoratives, Contexts and Presuppositions.	15
<i>Manuel García-Carpintero</i>	

Context in Representation

From a Contextual Graph to a Tree Representation	27
<i>Kimberly García and Patrick Brézillon</i>	
Enriching a Situation Awareness Framework for IoT with Knowledge Base and Reasoning Components	41
<i>Niklas Kolbe, Arkady Zaslavsky, Sylvain Kubler, Jérémy Robert, and Yves Le Traon</i>	
When Do the Truth-Conditions of <i>S Knows that p</i> Change? An Inquiry in the Conversational and Epistemic Mechanisms Involved in the Variations of Contexts	55
<i>Stefano Leardi and Nicla Vassallo</i>	
Derived Contexts: A New Argument for Their Usefulness	69
<i>Josep Macià</i>	
Discovering Context to Prune Large and Complex Search Spaces	81
<i>Arjun Satish, Ramesh Jain, and Amarnath Gupta</i>	

Context Modeling of Human Activities

Reasoning in Epistemic Contexts	99
<i>Yves Bouchard</i>	
Contextual Modeling of Group Activity	113
<i>Patrick Brézillon</i>	
Accountability Breeds Response-Ability: Contextual Debiasing and Accountability in Argumentation.	127
<i>Vasco Correia</i>	

Human Activity Recognition Using Place-Based Decision Fusion in Smart Homes	137
<i>Julien Cumin, Grégoire Lefebvre, Fano Ramparany, and James L. Crowley</i>	
Contextual Graphs for Modeling Group Interaction	151
<i>Kimberly García and Patrick Brézillon</i>	
Constraint-Based Context Model for Business Process Integration in a Higher Education Domain	165
<i>Jorge E. Giraldo, Demetrio Arturo Ovalle, and Flavia Maria Santoro</i>	
The ContextAct@A4H Real-Life Dataset of Daily-Living Activities: Activity Recognition Using Model Checking	175
<i>Paula Lago, Frédéric Lang, Claudia Roncancio, Claudia Jiménez-Guarín, Radu Mateescu, and Nicolas Bonnefond</i>	
Smart Is a Matter of Context	189
<i>Julien Nigon, Nicolas Verstaevel, Jérémy Boes, Frédéric Migeon, and Marie-Pierre Gleizes</i>	
On Conceivability and Existence in Linguistic Interpretation	203
<i>Salvatore Pistoia-Reda</i>	
Multi-purpose Adaptation in the Web of Things	213
<i>Mehdi Terdjimi, Lionel Médini, Michael Mrissa, and Maria Maleshkova</i>	
Context and the Virtual Human	227
<i>Chris Wilson and Roy M. Turner</i>	
Context in Communication	
Is Flew’s <i>No True Scotsman Fallacy</i> a True Fallacy? A Contextual Analysis.	243
<i>Robert Ian Anderson</i>	
Occasion-Sensitive Semantics.	254
<i>Tamara Dobler</i>	
Contextualism and Echolalia.	267
<i>Michal Gleitman</i>	
Cooperating Context Method: A Contextual Approach to Story Generation and Telling.	277
<i>James Hollister and Avelino Gonzalez</i>	
Three Versions of Semantic Minimalism	288
<i>Yang Hu</i>	

Security Policy Model for Ubiquitous Social Systems	302
<i>Vladimir Jovanovikj, Dušan Gabrijelčič, and Tomaž Klobučar</i>	
The Role of the Ostensive Communicative Context in the Childhood Social Learning.	315
<i>Emiliano Loria</i>	
Towards Contextualizing Community Detection in Dynamic Social Networks	324
<i>Wala Rebhi, Nesrine Ben Yahia, Narjès Bellamine Ben Saoud, and Chihab Hanachi</i>	
Influence of Lexical Markers on the Production of Contextual Factors Inducing Irony	337
<i>Elora Rivière and Maud Champagne-Lavau</i>	
Context and Natural Language in Formal Concept Analysis	343
<i>Tim Wray and Peter Eklund</i>	
Context Awareness	
Context-Aware User Interfaces for Intelligent Emergency Applications	359
<i>Feras A. Batarseh and Jash Pithadia</i>	
Unified Modeling of Quality of Context and Quality of Situation for Context-Aware Applications in the Internet of Things.	370
<i>Sophie Chabridon, Amel Bouzeghoub, Anis Ahmed-Nacer, Pierrick Marie, and Thierry Desprats</i>	
Requirements Elicitation and Complex Systems Modeling: An Interdisciplinary Approach to Emergency Situations.	375
<i>Elaine Alves de Carvalho, Alessandro Jatobá, and Paulo Victor Rodrigues de Carvalho</i>	
Modeling Situations in an Intelligent Connected Furniture Environment.	381
<i>Cedric Deffo Sikounmo, Eric Benoit, and Stephane Perrin</i>	
Context-Aware Big Data Analytics and Visualization for City-Wide Traffic Accidents	395
<i>Xiaoliang Fan, Baoqin He, and Patrick Brézillon</i>	
Context Aware Data Synchronisation During Emergencies	406
<i>Alireza Hassani, Pari Delir Haghghi, Frada Burstein, and Scott Davey</i>	
Is ‘Context-Aware Reasoning = Case-Based Reasoning’?.	418
<i>Nawaz Khan, Unai Alegre, Dean Kramer, and Juan Carlos Augusto</i>	

Quality on Context Engineering 432
Manuele Kirsch Pinheiro and Carine Souveyet

Supporting Context-Aware Engineering Based on Stream Reasoning 440
Dean Kramer and Juan Carlos Augusto

Can an Affect-Sensitive System Afford to Be Context Independent? 454
Andreas Marpaung and Avelino Gonzalez

Specific Topics: Context in Management

The Role of Context Within the Interactions of Knowledge
Intensive Processes 471
*João Carlos de A.R. Gonçalves, Fernanda Araujo Baião,
and Flávia Maria Santoro*

Contextual Support for Emergency Management Training:
Challenges for Simulation and Serious Games 484
Ilona Heldal

Improving Defect Tracking Using Shared Context. 498
Hassane Tahir and Patrick Brézillon

Specific Topics: Context in Learning

Elaborating the Context Calculator: A Design Experiment in Geothermy 513
*Claire Anjou, Thomas Forissier, Jacqueline Bourdeau, Yves Mazabraud,
Roger Nkambou, and Frédéric Fournier*

Contextualising Contrastive Discourse Relations:
Evidence from Single-Authored and Co-constructed Texts 527
Anita Fetzer

The DBR Methodology for the Study of Context in Learning. 541
Jacqueline Bourdeau

**Specific Topics: Quality Awareness in Modeling
and Using Context in Applications-QAMUCA**

A Context Aware Framework for Mobile Crowd-Sensing. 557
*Alireza Hassani, Pari Delir Haghighi, Prem Prakash Jayaraman,
and Arkady Zaslavsky*

Quality Parameters as Modeling Language Abstractions for Context-Aware
Applications: An AAL Case Study 569
José Ramón Hoyos, Davy Preuveneers, and Jesús J. García-Molina

Focus on the User: A User Relative Coordinate System
for Activity Detection 582
Andreas Jahn, Marek Bachmann, Philipp Wenzel, and Klaus David

**Specific Topics: Context in the Explanation and Evaluation
of Human Reasoning**

Contextual Reasoning in Human Cognition and the Implications
for Artificial Intelligence Systems 599
Debra L. Hollister, Avelino Gonzalez, and James Hollister

Investigating the Causal Link Between Context Triggers and Context:
An Adaptive Approach 609
Thanh Nyan

Putting Context Dependent Human Logical Reasoning
into the Right Context 617
András Veszélka

Specific Topics: Context in Linguistics and Philosophy

Immediate and General Common Ground. 633
Leda Berio, Anja Latrouite, Robert Van Valin, and Gottfried Vosgerau

Gender Roles in Russian Prohibitive Constructions: A Corpus Study. 647
Olga Blinova and Ekaterina Troshchenkova

A Contextualist Analysis of Insults 661
Y. Sandy Berkovski

Specific Topics: Context in Psychology and Bias

Context and Interference Effects in the Combinations of Natural Concepts. . . 677
*Diederik Aerts, Jonito Aerts, Lester Beltran, Isaac Distrito,
Massimiliano Sassoli de Bianchi, Sandro Sozzo, and Tomas Veloz*

A Computational Logic Approach to the Belief Bias in Human
Syllogistic Reasoning 691
Emmanuelle-Anna Dietz

Schizophrenic Conversations and Context Shifting 708
Manuel Rebuschi

Author Index 723