Computational Learning in Adaptive Systems for Spoken Conversation

Fact Sheet

Project Information

CLASSiC
Grant agreement ID: 216594

Status
Closed project

Funded under
FP7-ICT

Overall budget
€ 4 767 314

EU contribution
€ 3 400 000

Coordinated by
HERIOT-WATT UNIVERSITY
United Kingdom

Start date
1 March 2008

End date
28 February 2011

Project description

Cognitive Systems, Interaction, Robotics

Significant advances in human-computer interaction will require systems which can exhibit truly cognitive behaviour. This is particularly so in spoken dialogue systems (SDS) where, despite wide deployment and significant investment, current systems are still limited in capability and fragile to changes in environment or application.

Recent advances in statistical modelling and machine learning offer the potential for making a significant step forward in SDS. By both exploiting and extending these advances, the CLASSiC project will improve generalization to unexpected situations.
By modelling the whole end-to-end system as an integrated statistical process, the CLASSiC project will demonstrate a qualitative leap in the adaptivity, flexibility, robustness, and naturalness of SDS.

The CLASSiC partners will develop a modular processing framework with an explicit representation of uncertainty which connects the various sources of uncertainty (understanding errors, ambiguity, etc) to the constraints to be exploited (task, dialogue, and user contexts). This architecture will support a layered hierarchy of supervised learning and reinforcement learning in order to facilitate mathematically principled optimisation and adaptation techniques. The architecture will be developed in close cooperation with our industrial partner in order to ensure that it provides a practical deployment platform as well as a flexible research test-bed.

The resulting CLASSiC SDS will be able to adapt autonomously both to the needs of different users and to changing operating environments, and to learn through experience. The data-driven methodology will also enable faster and lower-cost system implementation through automatic optimisation. Overall, the project will demonstrate not only a step-change in the capability of practical spoken dialogue systems, it will also mark a significant step forward in the longer term goal of endowing autonomous systems with truly human-like capabilities.

Field of science

/natural sciences/computer and information sciences/artificial intelligence/machine learning/supervised learning
/natural sciences/computer and information sciences/artificial intelligence/machine learning/reinforcement learning

Programme(s)

Topic(s)

Call for proposal

FP7-ICT-2007-1

Funding Scheme

CP - Collaborative project (generic)
Coordinator

HERIOT-WATT UNIVERSITY

Address
Riccarton
EH14 4AS Edinburgh
United Kingdom

Activity type
Higher or Secondary Education Establishments

EU contribution
€ 451 202

Website
Contact the organisation

Administrative Contact
Eva Olszewska-Day (Dr.)

Participants (5)

UNIVERSITE DE GENEVE

Address
Rue Du General Dufour 24
1211 Geneve

Activity type
Higher or Secondary Education Establishments

EU contribution
€ 638 013

Website
Contact the organisation

Administrative Contact
Alex Waehry (Dr)

Ecole Superieure D'Electricite

Address
Rue Joliot Curie - Plateau De Moulon 3
91192 Gif Sur Yvette Cedex

Activity type
Higher or Secondary Education Establishments

EU contribution
€ 638 332

Website
Contact the organisation

Administrative Contact
Fanny GAGET (Ms)

ORANGE SA

Address
France

Activity type

EU contribution

Website

Administrative Contact

3 of 5
THE UNIVERSITY OF EDINBURGH
United Kingdom
EU contribution
€ 522,516
Address
Old College, South Bridge
EH8 9YL Edinburgh
Activity type
Higher or Secondary Education Establishments
Website
Contact the organisation
Administrative Contact
Angela Noble (Miss)

THE CHANCELLOR MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE
United Kingdom
EU contribution
€ 648,770
Address
Trinity Lane The Old Schools
CB2 1TN Cambridge
Activity type
Higher or Secondary Education Establishments
Website
Contact the organisation
Administrative Contact
Dawn Barker (Mrs)