

## Dr. Adrian K. Clear PhD, BSc

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### CONTACT INFORMATION

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### RESEARCH INTERESTS

Pervasive Computing, context-awareness, data fusion, information visualisation, pattern recognition

Broadly, my research interests are in engineering context-aware adaptive systems. My doctoral research was in *Engineering pervasive systems using interactive visualisation*, a product of which was a tool called Situvis for analysing, understanding, and abstracting sensor data. This is a component-based tool that supports an extensible set of interactive visualisation techniques for different analysis and engineering tasks. I am currently working at Orange Labs, Grenoble as a postdoctoral researcher in the area of sensor data fusion for home automation and sustainable living.

My research interests are as follows:

- Context-awareness and the semantics of user-centered situations.
- Fusion, aggregation and abstraction of sensor data.
- Modelling and reasoning about context.
- Engineering context-aware adaptive systems and applications.
- Visualisation of voluminous, highly-dimensional data.
- Techniques to evaluate pervasive computing systems.
- Usability and HCI in pervasive computing systems.
- Pervasive advertising.
- Complex adaptive systems.

### EDUCATION

PhD, Computer Science

Thesis titled *Engineering pervasive systems using interactive visualisation*  
under the supervision of Prof. Simon Dobson  
UCD Dublin, Ireland, 2009

BSc (Hons), Computer Science

*1st class honours*, UCD Dublin, Ireland, 2005

### AWARDS

*Postgraduate scholarship*

Embark Initiative from the Irish Research Council for Science, Engineering & Technology, 2005

*John Kelly Memorial Medal*

1st place in BSc (Hons) Computer Science degree, UCD Dublin, Ireland, 2005

*All-Ireland Red-eye programming competition*

1st place in the Red-eye 24-hour programming competition, 2005

ACADEMIC  
EXPERIENCE

**UCD Dublin, Ireland**

*PhD candidate*

**September 2005 to October 2009**

*Teaching Assistant*

**January 2008 to May 2008**

- Provided support to second-year computer science students.
- Graded weekly exercises and assignments.
- Carried out various module administration and organisation tasks.

*Tutor*

**September 2005 to April 2009**

- Tutored practical aspects of programming, data structures and foundations modules.
- Graded weekly exercises and assignments.

*Summer Internship*

**June 2005 to September 2005**

- Development of a tool to facilitate online marking and annotation of first year practical assignments.

*Undergraduate Student*

**September 2001 to June 2005**

- Final year project involved the creation of a web-based tool for comparison of multiple terminal restriction fragment length polymorphism (TRFLP) profiles to identify shared and unique components of microbial communities.
- Final year project resulted in a journal publication.

PROFESSIONAL  
EXPERIENCE

**Postdoctoral researcher**

*Orange Labs, Meylan FR*

- Research concerned with sensor data fusion for M2M systems.

**Workshop organisation**

*USE '07*. The 2nd International Workshop on Ubiquitous Systems Evaluation.

- Publicity chair and session chair.

**Reviewing**

*IoT '10*. Internet of Things 2010 conference.

*MRC '10* The 6th International Workshop on Modeling and Reasoning in Context.

The 3rd Workshop on Pervasive Advertising and Shopping 2010.

*UbiComp '10* The 12th ACM International Conference on Ubiquitous Computing.

*SEACUBE '10*. The 2nd International Workshop on Sensing and Acting in Ubiquitous Environments.

*SEACUBE '09*. International Workshop on Sensing and Acting in Ubiquitous Environments.

*Pervasive '09*. The 7th International Conference on Pervasive Computing.

*PerCom '09*. The 7th Annual IEEE International Conference on Pervasive Computing and Communications.

*UbiComp '08*. The 10th International Conference on Ubiquitous Computing.

*Revue d'intelligence Artificielle journal*. Special issue on Modelling and Reasoning on Context: The Role of Context in Human Tasks.

*UbiComp '07*. The 9th International Conference on Ubiquitous Computing.

### **Campus Company Development Program (CCDP)**

I participated in UCD Dublin's part-time program to assist academic entrepreneurs in creating a business plan for commercial aspects of their research.

The company under development was concerned with pervasive advertising.

### **Conferences attended**

*Pervasive '09*. The 7th International Conference on Pervasive Computing.

*UbiComp '08*. The 10th International Conference on Ubiquitous Computing.

*UbiComp '07*. The 9th International Conference on Ubiquitous Computing.

*IEEE SMC UK&RI*. The IEEE SMC UK&RI 6th Conference on Cybernetic Systems.

*CONTEXT '07*. The 6th International and Interdisciplinary Conference on Modeling and Using Context.

*HCI '07*. The 12th International Conference on Human-Computer Interaction.

*ECAI '06*. The 17th European Conference on Artificial Intelligence.

*Pervasive '06*. The The 4th International Conference on Pervasive Computing

*PerCom '06*. The 4th Annual IEEE International Conference on Pervasive Computing and Communications.

### **Student volunteer**

*Pervasive '06*. The The 4th International Conference on Pervasive Computing

### **PUBLICATIONS**

*Adrian K. Clear, Thomas Holland, Simon Dobson, Aaron Quigley, Ross Shannon and Paddy Nixon*. Situvis: a sensor data analysis and abstraction tool for pervasive computing systems. *Pervasive and Mobile Computing*. 2010.

*Juan Ye, Adrian K. Clear, Lorcan Coyle and Simon Dobson*. On using temporal semantics to create more accurate human-activity classifiers. In *Proceedings of the 20th Irish Conference on Artificial Intelligence and Cognitive Science (AICS 2009)*. Dublin, IE. August, 2009.

*Adrian K. Clear, Ross Shannon, Thomas Holland, Aaron Quigley, Simon Dobson and Paddy Nixon*. Situvis: a visual tool for modeling a user's behaviour patterns in a pervasive environment. In *Proceedings of the 7th International Conference on Pervasive Computing (Pervasive 2009)*. Nara, JP. May, 2009. Pages 327-341.

*Adrian K. Clear, Ross Shannon, Thomas Holland, Simon Dobson, Aaron Quigley and Paddy Nixon. Situvis: visualising multivariate context information to evaluate situation specifications. In Proceedings of the 2nd International Workshop on Ubiquitous Systems Evaluation (USE 2008). Seoul, KR. 2008.*

*Stephen Knox, Ross Shannon, Lorcan Coyle, Adrian K. Clear, Simon Dobson, Aaron J. Quigley, and Paddy Nixon. Scatterbox: Context-Aware Message Management. Revue d'Intelligence Artificielle 22 (5), September 2008. Pages 549-568.*

*Stephen Knox, Adrian K. Clear, Ross Shannon, Lorcan Coyle, Simon Dobson, Aaron Quigley, and Paddy Nixon. Towards Scatterbox: a Context-Aware Message Forwarding Platform. Fourth International Workshop Modeling and Reasoning in Context (MRC 2007), 2007. Pages 13-24.*

*Adrian K. Clear, Simon Dobson and Paddy Nixon. An approach to dealing with uncertainty in context-aware pervasive systems. In Proceedings of the UK/IE IEEE SMC Cybernetic Systems Conference 2007. IEEE Press. 2007.*

*Adrian K. Clear, Stephen Knox, Juan Ye, Lorcan Coyle, Simon Dobson, Paddy Nixon. Integrating Multiple Contexts and Ontologies in a Pervasive Computing Environment. In proc. Workshop on Contexts and Ontologies: Theory, Practice and Applications, ECAI06, Riva Del Garda, Italy, 2006. Pages 20-25.*

*Cindy J. Smith, Bret S. Danilowicz, Adrian K. Clear, Fintan J. Costello, Bryan Wilson, Wim G. Meijer. T-Align, a web-based tool for comparison of multiple terminal restriction fragment length polymorphism profiles. FEMS Microbiology Ecology, 54, 2005. Pages 375-380.*