Resume

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ACADEMIC QUALIFICATIONS

MSc in Electronic Commerce Technology (2002-2003) Aberdeen University, Aberdeen (UK).

This programme covered state-of-the-art technologies and related issues in e-business. It also focused on new developments and next-generation techniques, e.g. agents, data mining, Semantic Web. More importantly I was also given the opportunity to gain practical experience in the technical, business and legal issues involved in creating an e-business.

BSc(Hons) Computing Science (1999 - 2002) Aberdeen University, Aberdeen (UK).

This degree helped form the basis of my strong background in computing science, teaching me relevant aspects of both theory and practice. In particular the course "Software Engineering: Principles & Practice" taught me software engineering principles, verbal presentation skills and project management skills.

Computer Engineering (1997 - 1999) Padova University, Italy

I spent two years in Padua University in the Computer engineering department and then transferred to Aberdeen University. In Padua University I gathered a good scientific background as I undertook courses such as "Mathematical Analysis", "Physics" and "Chemistry".

RESEARCH AND TEACHING

Research Student, University of Aberdeen (2005 to present)

I am currently a Research Student at Aberdeen University. My research is funded by ACES (The Aberdeen Centre for Environmental Sustainability) involving the University of Aberdeen and the Macaulay Research Institute. ACES aims to bring together experts in land-use, ecology and socio-economics into interdisciplinary teams, aiming to resolve conflicting demands on the environment in a sustainable way. My research focuses on capturing complex social science methodology through the use of semantic web technologies and workflow tools.

Research Assistant, University of Aberdeen (2003 -2005)

I was employed as a research assistant (RAIB) on the FEARLUS-G project. This project explored the application of emerging Grid technologies within the social sciences in collaboration with scientists at the Macaulay Institute. In the course of this project I developed a particular interest in Grid technologies in order to solve complex computational tasks. Moreover, I developed an interest in Semantic Web technologies and their potential role within eSocial Science.

RELATED BACKGROUND

My interest in Cyberinfrastructure/eScience began while working as a research assistant on the FEARLUS-G (www.csd.abdn.ac.uk/research/fearg) project at the University of Aberdeen. FEARLUS-G was funded under the UK Economic and Social Research Council's eSocial Science initiative. During the project we deployed the FEARLUS land-use simulation model developed at the Macaulay Institute in Aberdeen, into the Grid context. As part of the project we learnt that exposing the scientist's experimental methodology was vital if we wished to support collaboration and sharing. In this project we see the need to provide tools to allow scientists to compose available (Semantic) Grid services to allow them to run their experiments. FEARLUS-G allowed large scale agent-based simulation experiments to be distributed across the Grid. Moreover, we designed an ontology (and associated metadata infrastructure) to support scientific argumentation and experimentation results in order to improve the rigour of agent-based modelling.

My experience with Fearlus-G lead me to a research student position at Aberdeen University in collaboration with the PolicyGrid project. PolicyGrid is one of the UK National Centre for eSocial Science (NCeSS) research nodes, and involves collaboration between computer scientists and social scientists at the University of Aberdeen, the Macaulay Institute (Aberdeen) and elsewhere in the UK. The project aims to support policy-related research activities within social science by developing appropriate Grid middleware tools which meet the requirements of social science practitioners.

My current research focuses on supporting social science research methodology. Scientists are ultimately interested in tools which allow them to conveniently design, share and run their own scientific workflows. By *scientific workflow* we mean a composition of structured activities (e.g. database queries, simulations, data analysis activities, etc.) that arise in scientific problem-solving. One of the key issues is to capture the complex methodological information associated with research activities; for example capture information about the context in which the workflow is designed, used and executed.

My expertise includes Globus Toolkit 3 and 4, C++ and Java: essential for Grid applications, developed during the FEARLUS-G project.

SELECTED PUBLICATIONS

Semantic Support for Computational Land-Use Modelling
E. Pignotti, P. Edwards, A. Preece, G. Polhill and N. Gotts
Cluster Computing and Grid 2005, IEEE Press, 2005.

Providing Ontology Support for Social Simulation
E. Pignotti, P. Edwards, A. Preece, G. Polhill and N. Gotts
First International Conference on eSocial Science, Manchester, June 2005.

A Semantic Grid Service for Experimentation with an Agent-Based Model of Land-Use Change.
J. G. Polhill, E. Pignotti, N. M. Gotts, P. Edwards, A. Preece (in press)
Journal of Artificial Societies and Social Simulation