



Academy of Technological
Sciences and Engineering

Cloud Computing – Competition and Internships

A working group under the Australian Academy of Technological Sciences and Engineering (www.atse.org.au) is reporting on the potential impact of cloud computing in Australia. As part of this, we are creating an exciting opportunity for students (graduate and undergraduate).

The working group is calling for proposals advocating novel *applications* of computing clouds answering the questions: how could a cloud platform be used to solve a previously intractable problem or to deliver services in a new and scalable way? Applications may be from a wide range of endeavours – spanning government, research, education, Internet businesses, and industry.

The selected proposals will be offered a paid summer internship with a member organisation, and provided with supervision, equipment and access to a variety of cloud services.

A remuneration package will consist of \$600 per week. Students will give a seminar at the end of their 8-week internship, where a panel will judge the most impressive application and be awarded a \$1000 prize.

Background

Cloud computing represents a major shift in the provisioning and delivery of computing infrastructure and services. It enables a shift from distributed, unmanaged resources to a variety of scalable centralized services managed in professional data centres, with rapid elasticity of resource and service provisioning to users. Cloud computing provides both computational power and data storage, allowing users to mount large-scale computations over potentially enormous data sets, often at web-scale. It is expected that cloud computing will have a significant impact on the way new startups, governments, industry and research organisations work. Many vendors now offer a range of services – from freely available clouds to pay-as-you-go resources. In some cases, there has been a factor-of-four decrease in the cost of computing because of economies of scale, sharing expensive power, cooling, and security, and the use of commodity PCs and disks, with fault tolerance obtained by software.

Cloud computing also brings with it novel ways of processing information. New approaches and toolkits, such as MapReduce and Hadoop, offer alternative ways of thinking about data and organizing computation over

massive data sets. Combining the way infrastructure and software is delivered, with these new approaches, offers significant potential for the development of new and exciting products, services and solutions.

Submissions

Applicants are asked to submit a 2-3 page document outlining their idea and approach. Submissions need to address:

- How their ideas use cloud computing in a novel manner;
- How this project will advance our understanding of cloud computing and its uses;
- The planned cloud resources used for this project, and how they will be used. Note: if a request for specific cloud computing services (such as Amazon EC2, Azure, Google, etc.) is made, the submission should provide reasons for the choice.

Project submissions are to be mailed as a single PDF file to internship@cloudinnovation.com.au

Key Dates

Final submission of proposal	8 th November 2009.
Acceptance notification	4 th December 2009.
Internship completed by	26 th February 2010.

Acknowledgements

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The working group, www.cloudinnovation.com.au, consists of voluntary members from: Australian National University, Australian Collaboration Research Services (ARCS), CSIRO, Google, IBM, Microsoft, Monash University, NICTA, Pacific Challenge, Queensland University of Technology, University of Adelaide, University of New South Wales, and University of Sydney.

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