CREST and Process Mashup in the Cloud

REST (REpresentational State Transfer) is the architecture style behind the WWW and responsible for many of the desired properties of the Web. However, REST was designed mainly for disseminating hypertext-based “data”. As the WWW is increasingly used for process and computation intensive applications, REST is being extended to support them. CREST (Computational REST)[1] and RESTful Business Processes [2] are two such extensions. The project is about supporting CREST and RESTful BP technologies in a cloud environment. The student(s) will port existing or build from scratch a CREST or RESTful BP framework on top of an existing cloud infrastructure (Google App Engine, Microsoft Azure or Amazon EC2). The students will also have the option to build a client-side demonstrator on a mobile device (Android or iPhone) to interact with the server-side cloud-based framework. Students will work closely with researchers at National ICT Australia in a very friendly team environment.

For more information, please email: Liming Zhu limingz@cse.unsw.edu.au or visit http://www.nicta.com.au/research/projects/business_adaptation_and_interoperation/business_process_mashup


Prerequisites: Programming skills in Java/JEE/Python (for Google App Engine) or Microsoft technologies (for Azure)

Group size: 1-3

AJAX-based Process Mashup

AJAX and mashup technologies have contributed significantly to the success of many highly interactive Web 2.0 applications ranging from Google Apps to social networks. However, existing the mashup technologies focus on “data” mashup rather than composing process-intensive applications. This project looks into the state-of-art Web technologies, for example Computational REST (REpresentational State Transfer) and Goolge Chrome OS (Web OS). The students will design and build a prototype using REST frameworks and some mashup libraries to support business process mashups. The student will have the opportunity to work on the latest in-browser technologies and mobile devices (Google Android or iPhone) to create AJAX-based process engines for both desktop and mobile browsers. Students will work closely with researchers at
Service Oriented Architecture for e-Business Standards

Recently, industry consortia have been developing e-Business standards using XML and business process modeling technologies. Such standards inevitably have to be mapped onto technology layers such as service-oriented, event-driven, mashup or mobile device infrastructures. Deriving a flexible reference architecture and implementation from e-Business standards are not always straightforward. It involves multiple technical and not-technical factors and design trade-offs. This project will guide students to look into the state-of-art in e-Business standards, web service protocol stacks, mashup and mobile (Android/iPhone) technologies. Students will work with one of Australia’s leading e-Business standardization body to solve real-world problems by inventing methods and implementing prototypes. The work will contribute to the standardization body directly. Students will work closely with researchers at National ICT Australia in a very friendly team environment. The project is suitable for students interested in software architecture/design, SOA and industry-wide reference architectures. For more information, please email: Liming Zhu limingz@cse.unsw.edu.au. This topic will be also co-supervised by Prof. Ross Jeffery (http://www.cse.unsw.edu.au/db/staff/info/rossj.html).

References

Prerequisites: Programming skills required.
Group size: 1-2
and latest software development methodologies. For more information, please email: Liming Zhu limingz@cse.unsw.edu.au or visit http://www.eclipse.org/epf/

Prerequisites: strong programming skills required.
Group size: 1-2
JRX16. Service-Oriented Eventing and Content Distribution

Web services often want to receive notifications and contents when events occur in other services. A mechanism for effectively registering specific interests and delivering tailored contents is needed. While there are existing web service standard for this, the mechanism needs to be tailored and optimized to support domain specific event and content distribution. This project will guide students to apply such a mechanism to a real world product information distribution scenario. Students may work with one of Australia’s leading e-Business standardization body. Students will work closely with researchers at National ICT Australia in a very friendly team environment. Suitable for students interested in software design, web services and industry-scale development. For more information, please email: Liming Zhu limingz@cse.unsw.edu.au. This topic will be also co-supervised by Prof. Ross Jeffery (http://www.cse.unsw.edu.au/db/staff/info/rossj.html). Resources: http://www.w3.org/Submission/WS-Eventing/
Prerequisites : strong programming skills required.