

The CSI Academy ICT managed internship programme

Bringing industry, researchers and students together



The CSI Academy is part of the Centre for Software Innovation based at The University of Auckland where the focus is on enhancing innovation potential and developing smarter ICT solutions more quickly.

The CSI Academy is a three-way internship offering organisations the equivalent of a term-length student internship that delivers benefits to each partner.

High-performing, highly motivated students work in small groups, mainly on industry-sponsored, short-term projects with mentoring/coaching provided by industry practitioners and academics. Projects are generally exploratory, such as:

- New technologies, tools and/or method investigation
- Non-critical commercial product development paths
- Alternative path investigation for commercial product development
- Proof-of-concept design and prototype.

Roles and responsibilities

Projects must have a *company sponsor*, who is the primary stakeholder for a proposed internship. The company must also provide an *industry mentor*, who provides day to day oversight of the interns while they are within the company. They provide students with industry-focused guidance and mentoring, creating the opportunity to develop the 'next generation' of staff. Companies can make this role a leadership

development opportunity. To deliver tangible benefits for both intern and the company, the sponsor and industry mentor must be committed to involvement for the duration of the project. CSI provide an *academic mentor* who provides academic guidance to the interns and also an ongoing linkage between the company and the University. A CSI-based project manager professionally manages projects. The *project manager* ensures the project scope matches students' skills and experience and provides a lightweight oversight of the project to ensure milestones are met and deliverables produced..

Benefits for companies

- Work with and help develop potential new hires
- Advance their own, in-house investigative projects
- Develop staff mentoring and project management skills
- Network with other New Zealand ICT companies

Benefits for students

- Achieve business-readiness by graduation
- Gain structured high-value work experience

Benefits for academics

- Interact more with ICT businesses and practitioners in tangible ways
- Increase awareness of the ICT business needs of new graduates and existing staff

The CSI Academy began in the summer of 2004/2005 and has brought more than 100 students and 40 companies together in successful internships.

Bringing industry, researchers and students together delivers work experience opportunities and new pathways to innovation

Example projects

E-commerce

An e-commerce company used an CSI Academy student team to investigate the feasibility of implementing a new secure e-commerce standard into their core product. The company wasn't convinced they had the capability or scale to implement the standard but knew in the medium term it would be required by their customers. The student team analysed the standard, available off-the-shelf components and in-house expertise, and proposed an architecture and methodological approach to implement the standard. On the basis of their report the company implemented a product based on the standard and proposed architecture within six months.

Online learning

A company had developed a framework for implementation of e-learning systems however configuration of the framework involved significant amounts of repetitive coding. A CSI Academy student team investigated the potential for a domain-specific visual language based on an application of the Microsoft DSL Tools technology platform. The aim of the project was to understand how DSLs and the Microsoft toolkit could be leveraged by the company. Results of the investigation were captured by the company in a wiki for reuse by other staff.

Mobile E-commerce

A company that developed a mobile e-commerce solution had issues with scalability of their software architecture and usability of the mobile client and desktop interfaces. An Academy student team undertook a usability evaluation of the interfaces and a proof-of-concept implementation of a revised service-based architecture. Recommendations from both the usability evaluation and the architecture investigation formed the basis for subsequent revisions of the company's product.

Legacy to SOA Architecture

A company developing enterprise systems for a specific market segment was starting a re-architecture of a legacy product to a new service-oriented approach. As part of this they wished to investigate performance and scalability of various architectural choices they had made. An Academy student team assisted these investigations, examining in particular the performance of the Hibernate object/relational persistency framework against more conventional JDBC-based approaches under very high data volume conditions. The results were used by the company to decide on their object-relational layer strategy.

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