Objective 2 Software Imaging and Visualisation

The aim of this objective is to develop novel methods, algorithms, and techniques to visualise multiple artifact-types (that is, not just source code, but including other documents, meta-data, or repository data) for diverse, complex, and large-scale software applications, in the context of the systems (software and hardware) of which they form part, and tailored to suit the specific conditions of the New Zealand software industry. Developers using these techniques will be able to grasp the design of the system they must work on more easily, quickly, and cheaply; and so improve their quality thereby delivering a performance improvement to the NZ software industry.

This will be achieved by:

- developing several new imaging and visualisation techniques and prototype tools
- adding these techniques to existing development tools or otherwise deploying so companies can use
- validating these tools/tool extensions with partner NZ ICT companies

Outcomes

At least two new imaging and visualisation tools or extensions to existing tools have been trialled by partner NZ ICT companies. These tools provide significant new information on multiple artifact-types than existing tool sets, measured by qualitative survey of partner ICT company staff.

Projects

- Survey of NZ industry
- Early Candidate Visualisations
- Visualisation Deployment
- Multi-language and meta-data visualisation prototypes
- Multi-artifact visualisation prototype
- Visualisation tool-set deployed

People

Objective leader: James Noble, VUW
Other academics:

- Neville Churcher, University of Canterbury
- Ewan Tempero, University of Auckland
- Jens Dietrich, Massey University

Students:

- 1 PhD, UoA
- 1 PhD, VUW - Craig Anslow
- 1 PhD, Canterbury
- 1 MSc, Massey - Vyacheslav Yakovlev

Timing

- Commences: 01/10/2007
- Finishes: 30/06/2011

News

Blog Posts

Blog: SoftVis 2010 created by Unknown User (cans013) 15 Jul, 2010
Software Process and Product Improvement

Blog: Second round of funding to build multi-touch tables created by Unknown User (cans013) 15 Jul, 2010
Software Process and Product Improvement

Blog: Software Visualization Blog created by Unknown User (cans013) 15 Jul,
Projects

- Qualitas Corpus - an organised collection of software systems intended to be used for empirical studies in software engineering. The primary goal is to provide a resource that supports reproducible studies of software.
- Multi-touch Software Visualization - multi-touch table user interfaces for software visualization
- Visual Software Analytics - tools to support visual software analytics of software from our Qualitas Corpus
- Barrio - a cluster analyzer for dependency graphs in OO programs.
- Web Of Patterns - a software x-ray that scans Java projects for design pattern instances.
- gd4jung - detection of architectural smells and antipatterns defined as graph queries.
- Web Based Software Visualisation - a number of experimental software visualisations using existing web based visualisation tools and techniques.
- Tandberg Silverlight Project - Content Server Client in MS Silverlight

Companies

We have engaged with the following companies:

- Next Window - a hardware company that makes multi-touch screens (Gordon MacDonald, John Newton)
- Unlimited Realities - an advanced graphics and user interface technology company (David Brebner, Ben Wilde)
- Centrulfow - business process visualisation company that specialises in providing highly interactive and intuitive interfaces into multiple information systems. (Steve Dickinson, Jonathan Giles)
- Kiwiplan - products for packaging industry (Gareth Cronin)
- Mindscape - .Net software development company (Jeremy Boyd, John-Daniel Trask)
- NextSpace - a 3D visualisation company specialising in RightHemisphere platform (Gavin Lennox)
- SolNet Solutions - Consulting and Client-Specific Product Development (Nick Evans)
- Chaos Dimention - a no longer active company, which used to specialise in visualising company email to find interesting patterns of communication (Tomer Sagi)

Publications

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<th>Objective 2 Publications</th>
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<td>2011</td>
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2009

2008
• Bennett Thompson, David J. Pearce, Gary Haggard, and Craig Anslow. Visualizing the Computation Tree of the Tutte Polynomial. In Proceedings of the ACM Symposium on Software Visualization (SoftVis), Herrsching am Ammersee, Germany, 2008.
Timeline