

KEITH CASSELL

168 Bertel Dr.
Covington, LA 70433

keithcassell@acm.org, kcassell@ecs.vuw.ac.nz
<http://homepages.ecs.vuw.ac.nz/~kcassell/>
(985) 892-6730

Objective

An academic position teaching and doing research in computer science with emphasis on software engineering and artificial intelligence. Also interested in applications of clustering techniques to biology.

Fields of interest:

Object-oriented analysis, design and programming, refactoring, clustering, data mining, classification, machine learning, agents and blackboard systems, knowledge-based systems, reusability, metrics, agile methodologies, testing, genetics, ecology.

Education

Ph.D. - Computer Science, Victoria University of Wellington, New Zealand. 2012 (Expected - thesis submitted in December, 2011).

Thesis: "Using clustering techniques to guide refactoring of object-oriented classes"

Advisors: Peter Andreae, Lindsay Groves

M.S. - Computer Science, University of Texas – Austin, Texas. 1985.

Thesis: "Tools for the analysis of large Prolog programs"

Advisors: Clement Leung, Bill Alexander

B.S. - Biology, High Honors, University of Texas – Austin, Texas. 1979.

Refereed Publications

"A dual clustering approach to the extract class refactoring", Cassell, K., Andreae, P., Groves, L., *Proceedings of the 23rd International Conference on Software Engineering and Knowledge Engineering*, Miami, FL, July, 2011, pp. 77-82.

"Visualizing the refactoring of classes via clustering", Cassell, K., Anslow, C., Groves, L., & Andreae, P., in *Proc. Australasian Computer Science Conference (ACSC 2011)*, Perth, Australia, January 2011, pp. 63-72.

"Towards automating class-splitting using betweenness clustering", Cassell, K., Andreae, P., Groves, L. & Noble, J. in *Proceedings of the 24th IEEE/ACM International Conference on Automated Software Engineering*, Auckland, New Zealand, November, 2009., pp. 595-599.

"The RLF Librarian: A Reusability Librarian Based on Cooperating Knowledge-Based Systems," McDowell, R. & Cassell, K., *Proceedings of the 4th Annual Rome Air Development Center Knowledge Based Software Assistant Conference*, September, 1989.

"Construction of Knowledge-Based Components and Applications in Ada," (with Kurt Wallnau and others), *Proceedings of AIDA, Fourth Annual Conference on Artificial Intelligence and Ada*, November 1988, pp. 3-1 through 3-21.

Teaching Experience

Tutor (Teaching Assistant), Victoria University of Wellington, New Zealand, 2011. SWEN 302 - Agile Methods. Supervised a programming lab and provided guidance in the usage of Agile methodologies and programming techniques.

Teaching Assistant, University of Texas, Austin, Texas, 1984. CS 305P - Introductory Programming. Gave lectures on programming in Pascal and provided programming help in the lab.

Teacher's Aide, Lincoln High School, San Diego, CA, 1982. Provided tutoring assistance and graded papers for the Science Department, particularly in biology.

Volleyball Coach, Victoria Eagles Volleyball Club, and others. Taught volleyball skills and strategy to competitive men's club teams.

Software Engineering Experience

Software Lead, Overwatch Systems/Textron 2005 – 2008.

Lead Software Engineer for the Fusion Technology Group (FTG). The FTG creates software that combines knowledge from different sources. Specific software tasks included the design and development of several software components, including a wrapper for a Bayesian Belief Network, a terrain-based vehicle tracker, an aggregator/classifier of military units on the battlefield, and a distributed blackboard-based fusion agent architecture that operates on disparate computing platforms.

Senior Software Engineer, 360Commerce, 1996-2005.

Over the years, acted as team lead and designed and developed many pieces of 360Commerce's Java-based retail software products. These products included the underlying application

framework, an IDE for that framework, point-of-sale systems, a web-based gift-registry, and back office and J2EE-based enterprise systems.

Led a team that developed and used automated tools for testing the company products. Was a “committer” for the Jakarta JMeter open source performance testing tool project. Traveled to client sites to assist in performance testing. Gave internal seminars on several topics pertaining to code quality and testing.

Designed and developed a web-based gift registry product using servlet and JSP technology.

Designed the original JDBC implementation of the framework’s data manager layer, which maps business objects to persistent storage such as a relational database. Other work included development of the business objects, development of a remote logging facility, and development of portions of the UI using AWT and JFC.

Member of the Software Engineering Process Group (SEPG). Primary responsibility was developing processes to achieve SEI Level 2.

Senior Software Engineer, Wayne/Dresser. 1995-1996.

Helped design and build a networked "pay at the pump" point-of-sale system written in C++.

Scientific Programming Specialist, Lockheed Austin Division. 1989-1995.

Principal designer of the Process Manager subsystem for the Tomahawk missile on-ship computers. The Process Manager was responsible for starting, killing, and moving processes depending on the availability of processors. Created an object-oriented design for the Process Manager and implemented it in C++.

Helped write Warsim proposal - performing object-oriented analysis for interacting battlefield simulators and making a preliminary sketch of a domain specific software architecture.

Integration and test lead engineer for an air-land battle management system. Work included integrating and testing work from a dozen programmers, including off-site subcontractors, software configuration control, development of the top level application shell, and the object-oriented design and development of several of the system subcomponents. Software was written in Lisp, C++, and C.

Lead engineer for the Blue Falcon project - object-oriented software for the detection and analysis of drug trafficking. Work included requirements analysis, object-oriented system design, identification and adaptation of software for reuse, code integration, and development of a graphical user interface.

Designer and developer for portions of DEVA - a knowledge-based system validation tool written in Prolog. Work included the development of code that checked for incompleteness in the knowledge base and code that translated knowledge from a Lisp-based system into Prolog.

Research Scientist, Unisys Paoli Research Center. 1986 - 1989.

Designer and developer of a semantic network based knowledge representation system written in Ada. Used this representation to develop two knowledge-based systems for a STARS contract: a software librarian and a software unit testing assistant. Designed and implemented a semantic network editor. Designed and developed portions of a computer-configuring expert system written in Prolog.

AWARDS & ACCOMPLISHMENTS:

Faculty Strategic Research Grants (\$2300 and \$3000), Victoria University of Wellington, 2010, 2011.

Best Presentation - IEEE New Zealand Central Section postgraduate presentation event, 2010.

Presentation Honorable Mention - IEEE New Zealand Central Section postgraduate presentation event, 2009.

Sun Certified Java Programmer for the Java 2 Platform.

Received several 360Commerce peer awards and bonuses, 1998-2002.

Received Lockheed "Superior Performance" and "PIP Express" awards, 1996.

University Fellowship. University of Texas, 1983.

Scored in top 5% on both the verbal and quantitative sections of the GRE, 1979.

Phi Beta Kappa, 1978.

Languages: Java, C++, Lisp, Prolog, C, Ada, Pascal, UML, XML, HTML.

REFERENCES: Available in a separate document.