

David James Pearce

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Education

Oct '00- Imperial College, University of London, UK *Doctor of Philosophy (submitted Feb 2005)*
Supervised by Dr. Paul Kelly, an investigation into various aspects of a context-insensitive pointer analysis for 'C'. The main focus has been on improving convergence time through online algorithms for topological order and strongly connected components.

Oct '96-Jun '00 Imperial College, University of London, UK *MEng Computing (1st class)*
A four-year course leading to a Masters degree in Computer Science. Final year project lead to a paper presented at the TOOLS 2002 conference [PKFH02]. Member of winning group for 3rd year project prize, sponsored by British Telecom.

Experience

Jul '04 Victoria University of Wellington, Wellington, NZ
Full-time lecturer in Computer Science

Apr '04 IBM Hursley, Winchester, UK
3 month internship working under Robert Berry on AspectJ

Jun '02 Bell Laboratories, Lucent Technologies, NJ, USA
11 weeks working under Oskar Mencer on the ASC project for Field-Programmable Gate Arrays. Developed a SUIF 1 compiler pass for translating C programs into the ASC intermediate language.

Apr '99 Philips Research Laboratories, Redhill
Six months development with Microsoft Visual C++, Win32 API and Windows CE, which formed the basis of an experiment in Human-Computer interaction discussed in the following paper:
Jonny Farrington, Vanessa Oni, Chi Ming Kan & Leo Poll. (1999) "Co-Modal Browser - An Interface for Wearable Computers." In Proc. of IEEE International Symposium on Wearable Computers, October 1999.

Skills

Excellent knowledge of C/C++, Prolog and SUIF research compiler. Good experience with Java, UNIX, x86 Assembler, HTML, LaTeX and Haskell.

Extra-Curricular

Avid Rugby player from age seven. Currently playing for Ealing RFC 1st XV. Two years as club captain of Imperial College RFC provided managerial experience.

References

Professor Chris Hankin, Director of Research, Department of Computing, Imperial College of Science, Technology and Medicine, Exhibition Road, London SW7 2AZ. Email: clh@doc.ic.ac.uk

Dr. Paul Kelly, Department of Computing, Imperial College of Science, Technology and Medicine, Exhibition Road, London SW7 2AZ. Email: phjk@doc.ic.ac.uk

Dr. Oskar Mencer, (formerly Bell Labs, Murray Hill, NJ, USA). Department of Computing, Imperial College of Science, Technology and Medicine, Exhibition Road, London SW7 2AZ. Email: oskar@doc.ic.ac.uk

Publications – refereed journal articles

David J. Pearce and Paul H.J. Kelly and Chris Hankin. A dynamic topological sort algorithm for Directed Acyclic Graphs. Submitted to the *ACM Journal of Experimental Algorithms*, 2005.

David J. Pearce, Paul H.J. Kelly and Chris Hankin. Online Cycle Detection and Difference Propagation: Applications to Pointer Analysis. In the *Software Quality Journal*, volume 12(4), pages 309-335, 2004, Kluwer

Publications – refereed conference papers

David J. Pearce, Matthew Webster, Robert Berry and Paul H. J. Kelly. Profiling with AspectJ, Submitted to the *European Conference on Object-Oriented Programming (ECOOP)*, December 2004.

David J. Pearce, Paul H. J. Kelly and Chris Hankin. Efficient Field-Sensitive Pointer Analysis for C, In *Proceedings of the ACM workshop on Program Analysis for Software Tools and Engineering (PASTE04)*, pages 37-42, 2004

David J. Pearce and Paul H. J. Kelly. A dynamic algorithm for topologically sorting directed acyclic graphs, In *Proceedings of the 3rd international Workshop on Efficient and experimental Algorithms (WEA04)*, volume 3059 of Lecture Notes in Computer Science, pages 383-398, 2004

Dong-U Lee, Oskar Mencer, David J. Pearce and Wayne Luk. Automating Optimized Table-with-Polynomial Function Evaluation for FPGAs. In *Proceedings of the fourteenth international conference on Field-Programmable Logic and its Applications (FPL04)*, volume 3203 of Lecture Notes in Computer Science, pages 364-373, August 2004.

David J. Pearce, Paul H. J. Kelly and Chris Hankin. Online Cycle Detection and Difference Propagation for Pointer Analysis. In *Proceedings of the third international IEEE Workshop on Source Code Analysis and Manipulation (SCAM03)*, Amsterdam, 2003.

Oskar Mencer, David J. Pearce, Lee W. Howes and Wayne Luk, Design Space Exploration with A Stream Compiler, In *Proceedings of the IEEE Conference on Field-Programmable Technology (FPT03)*, Tokyo, December 2003.

David J. Pearce, Paul H.J. Kelly, Tony Field and Uli Harder. GILK: A dynamic instrumentation tool for the Linux Kernel. In *Proceedings of the 12th International Conference on Computer Performance Evaluation, TOOLS 2002*, Lecture Notes in Computer Science, Volume 2324.