Corey J. Oliver

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Education

M.C.S., University of Iowa, **May 2012**

GPA: 3.72

B.A. Computer Science, *Magna Cum Laude*, Central College, Pella, IA, **May 2010**

GPA: 3.91 in major, 3.76 overall

Study Abroad: Hangzhou, China, Fall 2008 and London, England, Spring 2010

Industry

Software Developer **Summer 2010**
Alliance Technologies, Des Moines, IA

- Developed and supported **FullCount**, a touchscreen enabled point of sale system used in retirement communities
- Conceptualized a FullCount component using the Javascript framework Dojo which enabled users to design restaurant table layouts
- Created a web interface to remotely gather information on and monitor remote company distributed FullCount machines

Data Entry Operator **Summer 2006–Fall 2007**
Pella Corporation, Pella, IA

- Designed and implemented macros written in Visual Basic for various Microsoft Office products to streamline repeated office tasks
- Devised a solution for automating the importation of Excel spreadsheets into the software product Map Point, a geographical visualization and data analysis software program, which saved over a week's equivalent of manual work
- Created and maintained technical documentation for software solutions

Teaching

University of Iowa, Department of Computer Science

Teaching Assistant, Object-Oriented Software Design **Fall 2011**

Teaching Assistant, Computer Science II: Data Structures **Spring 2011**

Teaching Assistant, Introduction to Computer Science **Fall 2010**

Central College, Department of Mathematics and Computer Science

Supplemental Instructor, Introduction to Computer Science **Spring–Fall 2009**

Research

University of Iowa, Department of Computer Science

Research Assistant **Spring–Summer 2011 & Spring 2012**
Aaron Stump (Advisor)

- Implemented and verified properties of a graph data structure in the programming language **Guru**, a pure functional programming language for writing formal proofs demonstrating the properties of programs
- Proved formal properties of the software program **versat**, A formally verified SAT solver incorporating the essential features of modern SAT solvers, including clause learning, watched literals, optimized conflict analysis, non-chronological backtracking and backjumping
- Evaluated and tested versat against leading SAT solvers
- Researched and implemented a term indexing data structure for the software program **gtrw**, A parser generator based on term-rewriting
- Refactored and improved gtrw codebase to improve overall runtime performance for rewriting terms

Research Assistant **Summer 2011**
Cesare Tinelli

- Built a lexer and parser for the programming language Lustre for use in the front-end component of **KIND2**, An automatic verification tool for safety properties of Lustre programs
- Implemented code transformations for the KIND2 front-end of Lustre source code such as global `const` and `type` propagation, recursive expansion of `include` statements, and node call expansion
- Verified soundness of code transformation by writing a shell script to compare compilation output of transformed and untransformed Lustre source files

University of Houston, Department of Computer Science

Research Assistant **Summer 2010**
Rakesh Verma

- Coauthored working paper *Fast Filtering Heuristics for Bipartite Matching* which was submitted to the ALENEX 2010 conference
- Presented on my research to colleagues and compiled a poster to encourage further interest
- Researched and implemented optimizations for **adjmat**, an implementation of a set of heuristics to aid in reducing the cost of discovering a perfect bipartite matching on a graph encoded as a square adjacency matrix

Central College, Department of Mathematics and Computer Science

Senior Honors Thesis **Fall 2009–Spring 2010**
Stephen Fyfe

- Authored a senior honors thesis entitled *Improving Adjmat*
- Collaborated with advising faculty at Central College and the University of Houston
- Increased personal knowledge of research techniques

Publications

Pending Work

Rakesh Verma, Jack Wiedrick and Corey Oliver. **Fast Filtering Heuristics for Bipartite Matching**.

Refereed Conferences and Workshops

Duckki Oe, Aaron Stump, Corey Oliver and Kevin Clancy. **A Verified Modern SAT Solver**. In Proceedings of the 13th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI'12), Philadelphia, Pennsylvania, 2012.

Other Work

Corey Oliver. **The Impact of High Editorial Events on Wikipedia Page Quality**. Web Mining Semester Project. University of Iowa, Spring 2011.

Corey Oliver. **Improving Adjmat**. Senior Honors Thesis. Central College, Spring 2010.

Skills

Languages. Java, Scala, OCaml, Python, LaTeX, Bash, C/C++, Javascript, Actionscript, HTML

Operating Systems. Linux, UNIX, MacOS X, Windows

Last updated: January 5, 2012