

Resume for Clark L. Coleman

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Objective

Research and/or software development related to compilers or software reliability and security (Central Virginia or telecommuting), or general software engineering.

Education

- Ph.D in Computer Science from the University of Virginia in May, 2004.
- M.S. in Computer Science from UTD (University of Texas at Dallas) in May, 1988.
- B.S. in Mathematical Sciences (major in Computer Science) from UTD in May, 1984.

Publications

- Hiser, Jason D., Clark L. Coleman, Michele Co, and Jack W. Davidson, "MEDS: The Memory Error Detection System," *Proceedings of ESSoS 09: The International Symposium on Engineering Secure Software and Systems*, February 4-6, 2009, Leuven, Belgium.
- Bailey, Mark W., Clark L. Coleman, and Jack W. Davidson, "Defense Against the Dark Arts," *Proceedings of the 39th SIGCSE Technical Symposium on Computer Science Education*, Portland, OR, 2008.
- Dissertation: *Data Placement Optimizations for Multilevel Cache Hierarchies*, May, 2004.
- Coleman, Clark L. and Jack W. Davidson, "Automatic Memory Hierarchy Characterization," *Proceedings of the International Symposium on Performance Analysis of Systems and Software (ISPASS)*, Tucson, AZ, 2001.
- More publications are in progress as of December, 2008.

Computer Skills

Platforms: Windows, Unix (Linux, Solaris).

Languages & Tools: C, C++, Perl, ksh, lex, yacc, Ada, Fortran, object oriented design.

Employment

August 2007 to present: Research Scientist, University of Virginia.

- Co-Principal Investigator on Software Memory Protection (SMP) project funded through NICECAP (National Intelligence Community Enterprise Computing Assurance Program).
- Designed and implemented a static analyzer for x86 executables, including data flow analyses (live variable analysis, fully pruned SSA form, etc.) and a type inference system, to assist in protecting vulnerable programs from memory overwriting exploits.

May 2005 to July 2007: Research Associate, University of Virginia.

- Developed and then revised anti-virus undergraduate course. Assisted in teaching the course in Fall 2005 and Spring 2007 semesters. Presented related poster at 2007 SIGCSE conference.
- Wrote successful grant proposal for SMP project under NICECAP (see above).

September 1996 to May 2004: Computer Science Ph.D. student, University of Virginia.

- Dissertation topic: *Data Placement Optimizations for Multilevel Cache Hierarchies*. Advisor: Professor Jack W. Davidson.
- Particular areas of study included memory hierarchies, benchmarking, performance counters, profiling techniques, profile-guided optimization, and static analysis.

August 1989 to August 1996: G.E. Fanuc Automation, Charlottesville, VA.

- Senior Software Engineer in the code generation and translation group.
- Co-developed translator from Pascal dialect to C.
- Developed corporate C coding standard; investigated ANSI standard conformance issues.
- Worked on object-oriented redesign of a large software base during transition from C to C++.

July 1987 to August 1989: Bell Northern Research, Dallas, TX.

- Member of the Scientific Staff. Designed telecommunications switching software enhancements for the MCI and Sprint long distance networks.
- On my own initiative, designed and implemented text and video based training courses used in the training of new software employees. Taught group classes.
- Left to pursue Ph.D. in compilers at University of Virginia.

February 1986 to April 1987: Voice Control Systems, Dallas, TX.

- Software engineer implementing hard and soft real-time software in Intel X86 assembly language at a speech-recognition R & D firm.
- Designed and coded the user interface software for a speech-controlled telephone. Did liaison work with contract customer (Southwestern Bell). Coded, optimized, and tested digital signal processing software beneath the user interface. Helped debug some issues in the telephone hardware design. Guided the product to initial launch on schedule.
- Departed when venture capital support was removed from the company.

July 1981 to December 1985: U.S. Telephone, Dallas, TX.

- National Network Designer, then Lead Programmer/Analyst, specifying and developing software on my own initiative to automate data reporting, data analysis, database verification, and long distance network optimization. Saved substantial network costs through programs developed to analyze the efficiency of the network and recommend improvement.
- After corporate merger with Sprint, took job at Voice Control Systems rather than relocate to Kansas City.

Strengths

- Taking initiative, generating my own ideas, working independently.
- Oral and written communication skills; software documentation skills; teaching skills.
- Understanding and implementing complex algorithms.
- High standards for software engineering.
- Knowledge of compiler analyses and their relationship to computer security.