

# David B. Lavo, Ph.D.

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## Objective

Engineering position with a mix of research and development roles, either in the field of VLSI test and diagnosis, or in new product software development.

## Professional Strengths

Self-motivated and detail-oriented with a strong commitment to quality of work; extensive experience in VLSI test and diagnosis (8 years) and programming (11 years) in a variety of languages and environments; strong research skills, with proven ability to enter a new area and make significant contributions; ability to work well alone or in a team, and excellent communication and training skills.

## Education

Ph.D. in Computer Engineering, September 2002, University of California Santa Cruz

- *ACM Doctoral Dissertation Award nomination*

M.S. in Computer Engineering, June 1996, UC Santa Cruz

- *SRC Inventor Recognition Award*
- *MICRO Fellowship*

B.S. in Computer Engineering, June 1993, UC Santa Cruz

- *Highest Honors in the Major*

## Languages & Technical Skills

- C / C++ / STL, Java
- Windows API / MFC / Visual C++
- Windows kernel & file-system development
- Cross-platform (Windows – Unix) code development
- Perl, Tcl/Tk, Unix shell scripting
- HTML / DHTML / CGI / Javascript
- Logic design / Verilog / Verilog PLI
- Logic synthesis (Synopsys Design Compiler)
- ATPG, verification, RTL analysis
- Boundary-scan, pad-test and board test
- Tester program generation and test data translation
- Debug, fault diagnosis and failure analysis

## Industry Experience

*May 2003 -- Present*

*Thuridion Software Engineering  
Santa Cruz & Scotts Valley, CA*

**SR. SOFTWARE ENGINEER** --- Responsible for the development, design and implementation of several new software products. All projects involved independent research and product development, and included substantial amounts of client management and presentation.

- Developed and implemented several innovative DRM products for the protection of copyrighted video and music. Independent research led to at least 3 patents on new DRM technologies. Development of products involved significant Windows kernel programming, coding of media components, and the integration of strong encryption algorithms.
- Produced major new version of thermodynamic calculator program, involving many new calculation and graphing features and multiple UI enhancements. Re-wrote many existing calculations for robustness, adding precondition and boundary checks that drastically reduced the occurrence of calculation errors and program faults.
- Designed and produced the security and data-exchange subsystem of a large Internet database application. The client was a major financial institution for whom security was the key concern. Implemented a robust public-key cryptosystem for distributed users across non-secure channels and varying geographies.

*November 1996 – April 2003*

*Agilent Technologies/Hewlett-Packard Company  
Santa Clara & Palo Alto, CA*

**R&D TEST ENGINEER** --- Responsible for the development and support of test and diagnosis methodologies for custom ASICs, and the training of designers and test engineers. Main focus on boundary-scan, built-in test, debug, and failure analysis, but also involved in pad test, testability analysis and RTL checking. Position involved significant amounts of original research, tool and methodology development, support, documentation and training.

- Developed novel boundary-scan tools and techniques, including the invention of a modular TAP-based test methodology (published and presented at ITC 2000). Designed and implemented a web-based system to allow designers to customize and download the RTL for TAP controllers and other TAP-based test IP. Created and delivered a boundary-scan class for designers across HP and Agilent, and supported designers and design architects on all aspects of boundary-scan implementation.
- Designed and implemented the internal fault diagnosis tools used by Hewlett-Packard and Agilent Technologies. Introduced and patented novel algorithms to handle complex defects such as bridging faults and non-scan errors such as I<sub>DDQ</sub> failures. Designed and coded the tools using C++ and STL, and incorporated them into an industrial CAD tool flow. Published nine papers reporting these techniques and documenting their results, including one paper that won an award at the 1998 International Test Conference.
- Assisted on the debug and failure analysis on various production ASICs, serving as a diagnosis and test consultant to HP and Agilent's FA teams. Consulted on the analysis and investigative approach for several FA projects, and produced analytical reports for both customers and manufacturing teams. Also, conducted test, DFT and fault diagnosis training for engineers from Agilent's new FA center in Malaysia.

*Prior experience, publications and patent information available upon request.*