

JIM D. FREEZE, PH.D.

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SUMMARY

Software Architect/Senior Developer recognized for creative and pragmatic solutions to difficult problems. Innovative leader and contributor known for significantly reducing expenses and increasing productivity. Proven success in implementing internal systems to facilitate inter- and intra-team communication. Sought out by coworkers for automation expertise. Collaborates with others and promotes cross-functional team cooperation. Personable, honest and levelheaded engineer who promotes development of others.

TECHNICAL SKILLS

Operating Systems:	Sys Admin: FreeBSD, Mac OS X, Windows; User Exp: Linux, Solaris, HP-UX, DOS
Programming Languages:	C, C++, Ruby, Perl, Bourne Shell, C Shell, PHP3/4, FORTRAN, sed, awk, Postscript, VisualBasic, Pascal
Developer Applications:	YACC, RACC, SWIG, C++ Builder, Visual SourceSafe, Visual C++, InstallShield
Open Source Applications:	Apache, MySQL, gcc, cvs, Gnu Tools, ViM, <i>VNC</i>
Web:	Rails, DRb, HTML, XML, CGI, CSS, JavaScript
API's:	ITKDB, COM, MAPI, Folio Integrator
Keywords:	Software Architect, Software Automation, Web App Development, Computational Electromagnetics, Interconnect Modeling, CAD, Optics, Numerical Analysis,
End User Apps:	MS Office, IE, Netscape, Safari, Mozilla, LaTeX
CAD Applications:	Cadence (ICFB, QX), Raphael, Assura (CAPGEN), Mentor Graphics (xCalibrate), Synopsys (StarRCX), <u>Mathematica</u>
Other:	BNF, UML, eXtreme Programming, 8D, DoE

PROFESSIONAL EXPERIENCE

FREESCALE SEMICONDUCTOR, Austin, TX **2005 - Present**

Device Technology Engineer

Enhanced model QA process and the development of an interconnect model file (a.k.a. stackup description file).

CYPRESS SEMICONDUCTOR, INTL., Lexington, KY **2000 - 2005**

Senior-Staff Device Technology Engineer (2002-2005)

Guided direct report in development of interconnect models. Designed and developed automation projects for interconnect development, IP simulations and test chip development.

- Positioned company to save \$400K per testchip by architecting 'test cell automation' project to auto create layout and schematic for test cells.
- Saved three man-days in RCX QA per model and improved model quality by automating creation of microstrip and stripline test structures in layout and Raphael and comparing simulation results for 10K+ structures.
- Delivered documented savings of \$484K by leading or serving as principal contributor to supplementary projects over two years.
- Designed a file format to define silicon deposition that allows a single source stackup description to be converted to model input decks for Assura, Mentor, Synopsys and Raphael.
- Improved stability and maintainability of internal software (reducing software problem report count) by introducing 'test first' development to Cypress engineers.
- Increased productivity and SW IP sharing by creating a curriculum for object oriented automation development for Cypress University and provided training company wide.
- Promoted IP sharing by creating and effectively leading an application sharing project and creating a peer review board, a file repository and an internal website.

Senior Device Technology Engineer (2000–2002)

Developed and QA'd post layout interconnect models.

- Reduced model development time three days by creating an application to launch distributed jobs (simulations) and collecting output.
- Created application to publish model performance curves for communicating device performance to design engineers. The charts are an integral part of every model release.
- Saved two man weeks per tapeout by creating a system to programmatically build Charged Based Capacitance Measurement (CBCM) test structures and redesigning CBCM for automation and improved accuracy.

LEXMARK INTERNATIONAL, Lexington, KY

1998-2000

Senior Software Systems Engineer

Printer Performance Task Force lead and technical lead of Test Re-engineering Team.

- Improved printer performance by designing and implementing fast compression algorithm for low bandwidth CPU's.
- Drove drop alignment error to 1/600th inch or below for improved print quality by developing and patenting a three-color multi-printhead alignment system.

ANALYSTS INTERNATIONAL, contractor at Lexmark Intl.

1998

Senior Software Engineer

Team lead of Software Research.

- Reduced debug time in print driver formatter code by creating a raster viewer for analyzing printhead data.
- Enabled best of class printer performance by analyzing compression algorithms and developing software throughput metrics for printer performance.

MAILMAX, LLC., Edgewood, KY

1997-1998

Chief Software Architect

Managed and developed MailMax 4 and SimpleView 4, an email searching program and Folio database viewer.

- Designed and developed a custom Folio database and viewer for managing internal workflow.

FOLIO CORPORATION, Provo, UT

1994-1997

Software Architect

- Supported creation and publication of fast searchable free-form text documents.
- Ported Windows software to MacOS and architected/implemented secure publishing system using RSA tools.

Brigham Young University, Provo, UT

Prior to 1994

Instructor

- Taught Fiber Optic Communications graduate course.

EDUCATION

Ph.D. in Electrical and Computer Engineering, Brigham Young University, Provo, UT

Dissertation: "Theory and Application of the Recursive Green's Function Method for Analysis of Electromagnetic Waves in Inhomogeneous Media"

B.S. and M.S. in Electrical and Computer Engineering, Brigham Young University, Provo, UT

Thesis: "Fabrication of High Efficiency Diffraction Gratings In Single-Mode D-fibers Using a Holographic Beam Interference Approach"

Awards: Sigma-Xi Research Award - Best Thesis

University of Oklahoma, Norman, OK

Awards: President's Honor Roll, Dean's Honor Roll

PROFESSIONAL TRAINING

- 8D Process
- Philosophy of SPC
- Design of Experiment
- Basic Statistics
- Problem Solving Techniques
- Code of Business Conduct and Ethics
- Managing Diversity/Preventing Harassment
- Team Facilitation
- Optimized C++
- Covey Time Management

PUBLICATIONS

1. Over eighty internal publications comprising technical documents, specifications, memos and course curriculums for Cypress Semiconductor.
2. 1998, 1999, 2000, Four publications internal to Lexmark International, Inc. containing proprietary information.
3. Patent #6,450,607, "Alignment Method for Color Ink Jet Printer", US Patent, submitted September 15, 2000, granted September 17, 2002.
4. Michael A. Jensen and Jim D. Freeze, "A Recursive Green's Function Method for Boundary Integral Analysis of Inhomogeneous Domains", *IEEE Transactions on Antennas and Propagation*, vol. 46, num. 12, pp. 1810-1816, December 1998.
5. Jim D. Freeze, Michael A. Jensen and Richard H. Selfridge, "A Unified Green's Function Analysis of Complicated DFB Lasers", *IEEE Journal of Quantum Electronics*, vol. 33, pp. 1253-1259, August 1997.
6. J.D. Freeze and R.H. Selfridge, "D-fiber Holographic Diffraction Gratings", *Optical Engineering*, Vol. 32 No. 12, p. 3267 (Dec 1993)
7. Jim D. Freeze and M. A. Jensen. "The Recursive Green's Function Method for Surface Integral Equation Analysis of Inhomogeneous Media". In 1997 *IEEE AP-S International Symposium Digest*, volume 4, pp. 2342-2345, Montreal, Canada, July 13-18, 1997.
8. Michael A. Jensen and Jim D. Freeze, "A Recursive Green's Function Method for Efficient Solution of the Volume Integral Equation", *IEEE AP-S International Symposium Digest*, Baltimore, MD, July 21-26, 1996
9. Jim D. Freeze and Richard H. Selfridge, "Gain modeling for in-fiber distributed feedback lasers using recursive Green's functions", *Proceedings of SPIE*, Issue 2289-01, July 1994
10. J.D. Freeze and R.H. Selfridge, "Distributed Feedback D Fiber Dye Laser", *Proceedings of SPIE*, Issue 1751-37, pp. 331-342 (1992)
11. J.D. Freeze, M.A. Jensen, R.H. Selfridge, "High Efficiency Diffraction Gratings in D-type Fibers", *Optical Fiber Communication Conference Technical Digest*, Vol. 4, p. 46 (1991)
12. G.T. Pugmire, J.D. Freeze, M.A. Jensen, and R.H. Selfridge, "Controlled Etching to Produce D-fiber Diffraction Grating Devices", *CLEO (Anaheim California)*, Vol. 7, paper no. CFB4, p. 476 (1990)
13. R.H. Selfridge, J.D. Freeze and J. Curtis, "Novel Method for Producing Diffraction Gratings in Optical Fibers", *Proceedings of SPIE*, Vol. 1168, pp. 323-331 (1989)