Craig M Larsen

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Professional Summary

- Looking for a challenging position in Data Science, Data Analysis, or Software Development

Work Experience:

Student/Volunteer – 2015-Present
- Studied/Coursework in Data Science, Statistics, and Machine Learning including Natural Language Processing and Deep Learning.
- Designed and developed Hazard Tracking System web site and database using Django, Python, and Javascript.
Technologies: Django, Python, Hadoop, Spark, Algorithms, Object Oriented Programming, Bayesian Statistics, R, Javascript, SQL, NLP, Tensorflow, Numpy, Pandas, Sci-py, Scikit Learn, Jupyter Notebook, Graph Networks, Tableau.

Ansys (Apache Design Automation) - Sr. Product Specialist - 2013-2015
- Technical Product Marketing of RedHawk/Totem Power Integrity and Reliability products.
- Wrote new feature/product proposals (MRDs/PRDs) based on Market/Technology needs.
- Proposed next generation Stress-Based Electromigration verification methodology which resulted in patent.
- Conducted product survey to help determine brand perception and product differentiation.
- Reviewed product flows, GUI, and worked with R&D for usability improvements.
- Implemented and managed internal documentation webserver including analytics to measure page views, search topics, and access frequency.
- Open Source reviewer for all Apache products. Audited existing software and managed Open Source license compliance issues.
- Debugged User/Product issues by analyzing multi-gigabyte data files.
Technologies: Python, Big Data (100s GBs), Data Analysis, TCL, C, HTML, Linux

Mentor Graphics - Technical Marketing Engineer - 2007-2012
- Product Management of Calibre CMPAnalyzer product.
- Defined and prototyped simulation and analysis EDA tool in TCL and C for planarity related design verification and mitigation with integrated Model-Based Fill utilizing custom and proprietary code including integration/customization with 7 different Mentor products and 2 third-party simulators.
- Successfully transferred development to Engineering group.
- Actively ran cross-functional meetings working with ENG, QA, Documentation, Licensing, and other groups across the world in multiple countries setting priorities for development work and providing the product roadmap and direction.
- Provided internal training and materials for corporate Application Engineers.
- Provided pre-sales support at potential customer sites and was actively involved in every potential customer engagement involving product.
- Managed reference flow and on-going release certification.
- Wrote MRDs and enhancement requests based on customer feedback and market requirements.
Technologies: Application Development, Optimization, Algorithm Development, TCL, C, Data Analysis, Machine Learning (Linear Regression, modeling), UI, Linux

Focus Enhancements – Consultant - 2006
- Defined test methodology for digital signage products.
- Documented test procedures and wrote test manual.
- Wrote automated tests of serial and web interfaces using Expect and TCL scripts.
- Reviewed product PHP and C code giving input to software engineers based on test requirements.

- Administered Linux workstation.
Technologies: TCL, Expect, PHP, C, Linux

Silicon Harvest – Consultant - 2002-2005
- Defined products and services for DFM and Yield Services consultancy to leverage yield optimization opportunities during design phase for fabless semiconductor companies and IDMs.
- Developed proprietary algorithms to predict critical area and design element statistics from pre-layout chip specifications.
- Conducted market research on yield prediction market for EDA company.
Technologies: Algorithm Development, C, Statistics, R, Linux

PDF Solutions – Product Manager - 1999-2001
- Responsible for creation and development of fabless business.
- Created new products aimed at fabless segment defining cost models, infrastructure requirements, and business strategy.
- Defined corporate strategy with respect to design optimization and fabless customer needs.
- Commissioned related market research survey and analyzed data for product definition and ideal customer identification.
- Consultant responsible for managing engagement at client site of large Japanese IDM.
- Dealt with many layers of management and delivered presentations to client providing effective communication despite language and cultural barriers.
- Analyzed semiconductor manufacturing yield data for optimization of process.
Technologies: Data Analysis, Statistics (ANOVA/MANOVA), Machine Learning (Classification, Logistic/Linear Regression), R, Linux, Survey Design and Analysis, Data Visualization

Centillium Communications – Sr. Engineer Manufacturing Operations - 1997-1999
- Built world-wide manufacturing infrastructure from ground up through delivery of first packaged parts.
- Interfaced with wafer foundry, packaging, test, and freight forwarder subcontractors both domestic and international.
- Responsible for subcontractor technology evaluation including CMOS, mixed-signal, and bipolar processes.
- Developed corporate manufacturing technology roadmap.
- Responsible for package leadframe, substrate development, and sustaining engineering support including SPICE models, LVS, and physical verification (DRC) deck qualification.
Technologies: Linux, Excel, Data Modeling, DRC

Cirrus Logic – Semiconductor Technologist - 1995-1997
- Program Manager for ESD/Latchup design responsible for making all designs robust against internal ESD/Latchup test methodologies.
- Organized and implemented design strategies, device design, design rules, and I/O padring reviews for all Cirrus Logic products (Fremont).
- Supervised junior ESD/Latchup engineer.
- Project Manager responsible for scheduling and interfacing between process development team and manufacturing, test chip production thorough process qualification at joint venture.
- Product Technologist responsible for providing input to technology decisions based on product family profiles and future product strategy.
- Designed and implemented smart wafer allocation optimization program using a genetic algorithm in C with GUI. - Implemented web server to distribute information.
Technologies: Machine Learning (Genetic Algorithm), Optimization, C, Data Visualization, UNIX, HTML.

Integrated Device Technology (IDT) - Device Engineer - 1993-1995
- In charge of standard cell library management and technology file modeling.
- Produced technology models for static and dynamic timing tools.
- Produced HSPICE device parameter extraction and models for all IDT CMOS and BiCMOS processes.
- Implemented Monte Carlo statistical methodology for creation of skew models.
- Designed and programmed GUI based standard cell modeling automation program.
- Explored using Machine Learning (Genetic Programming, Symbolic Regression) to create HSPICE models.
Technologies: Parameter Optimization, Statistics (Monte Carlo methods), Machine Learning (Genetic Programming, Symbolic Regression), C, Data Visualization, UNIX

Advanced Micro Devices (AMD) - Process Integration Technician - 1991-1993
- Process integration engineering.
- Designed Statistical experiments to optimize process flow for EEPLD CMOS technology.
- Optimized poly doping for silicide process.
- Interfaced with Material Analysis department for surface and bulk analysis of wafer samples.
- Generated Statistical Process Control charts and calculated lot movement statistics.
- Wrote programs to perform statistical analysis.

Technologies: Data Analysis, Data Visualization, Statistics (Design of Experiments), Multivariate Regression Modeling, PCA Optimization, Statistical Process Control, Response Surface Modeling, UNIX

Areas of Knowledge:

Python (Numpy, Pandas, Scipy, Scikit-learn), C, C++, TCL, Perl and R programming languages. Some knowledge of SQL, Java, Django, Javascript, CSS, and HTML. Machine Learning. Natural Language Processing (NLTK). Modeling and Optimization. Statistics, Statistical Design of Experiments, Time-Series Analysis. Map Reduce, Hadoop and Spark. Tableau and Excel.

Patents:

- US Patent #8321817 “Model-based fill” granted 11/27/2012
- US Provisional Patent #62/022,939 “Computer-Implemented Systems and Methods for Identifying Wire Segments for Adjustment”.

Awards:

- Spotlight Award - AMD 1992
- Spot Bonus - Mentor Graphics 2007

Publications:

- "Fill Solutions Are Getting Smarter" in Journal IC Design and Verification
http://www.eejournal.com/archives/articles/20090825_mentor/

- "Chaos and the Foreign Exchange Market" in Modeling Complex Phenomena,
Springer-Verlag 1992.

Education:

San Jose State University
Master of Science in Physics, 1992.
Emphasis in Nonlinear Dynamics and Computational Physics

University of California, Santa Barbara
Bachelor of Science in Physics, 1990.