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SUMMARY: Team lead with over ten years experience encompassing all phases of software development, from requirements and design to coding, debugging, testing, documentation, user training, and maintenance. An optimist with heavy focus on customer support capable of solving complex design and implementation issues. Works well independently, but enjoys a collaborative team environment. Impeccable business skills developed in environments ranging from DOW30 to startup. Strong skills leading the development of high performance/high availability software systems. Experience writing reentrant code for shared memory multi-core environments. Excellent skills in .NET interop, x64 programming, and solving difficult deployment issues. Experience with software development in an FDA regulated environment, and have personally managed a successful 510K application. Experience with systems level architecture design and team leadership.

EDUCATION: University of Rochester - BS Physics 1991, MS Applied Math 1992, 2 additional years towards PhD in Applied Mathematics from 1992 to 1994.

CORE COMPETENCY: Implementation, commercialization, and integration of all varieties of business logic, image processing, computer vision, and machine learning algorithms into distributed computing environments. Ten years experience image processing, color science, and machine vision algorithms. Two years experience in document classification and ECM.

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Languages: C++, C#, Java, SQL, C, Fortran 77/90, Perl, Visual Basic
Recent OS Experience: Windows 7, Windows Vista, Windows XP, Windows 2003/2005 Server
Development Tools: Microsoft Visual Studio 2005/2008/2010
OOP: UML, Visio, Rational Rose
DB: SQL Server 2000/2005/2008, Oracle 8/9/10, Access, KDB
OR Mapping: Entity Framework, Hibernate, nHibernate
Microsoft Software Technologies: .NET Framework 2.0/3.0/3.5/4.0, EnterpriseLibrary, WCF, WPF, WWF, ADO .NET, DTC, Silveright, COM, MFC, Win32 Api, Win32 SDK, Castle, MSMQ, Unity, NServiceBus,
Patterns: GOF, MVC, MVVM,
Virtualization: VMWare ESX, Microsoft Virtualization Server
Cloud Technologies: Amazon EC2, Azure
Imaging: Intel IPP, Matrox MIL, OpenCV, National Instruments NIVision, VTK/RTK, Lead Tools, DICOM
Image File Format: tiff/BigTiff, jpeg, jp2, j2k, jbig, ICC, Deep Zoom, multiple proprietary formats
Document Classification & OCR: Nuance, Expervision, ScanSoft, EMC Captiva, IBM Classification Module
Tools: Intel MKL, Matlab, R, Atlas, Mathematica, Arpack, LAPACK, OpenMP, Intrisics & SSE2, Inline MMX & SSE Assembly, Boost, STL
Documentation: MSHelp, Doxygen, Perceps
Test, Debugging, & Performance: MSTest, NUnit, PowerShell, Red Gate, Rational Purify, Intel C++ & Fortran Compiler, Intel Thread Building Blocks & Profiler, Chess, Moles, Pex, StyleCop, ReSharper, Sysinternals
SCM: TFS, Wix, MSBuild, Rational Clear Case, Subversion, CVS, Perforce
Development Methodologies: CMM, Agile/SCRUM, AOP, RAD, Systems Engineering
UNIX: Fedora & Red Hat Linux, Eclipse, all GNU tools, JBoss, CORBA

EXPERIENCE:

Cernostics Inc., Director Imaging Informatics, March 2011- Present Team lead and algorithm developer for computer vision, image processing, and workflow software for whole slide analysis platform. Worked closely with pathologists and cancer immunologists to model oncogenesis. Developed academic collaborations with machine learning and image processing groups at Carnegie Mellon University and The University of Pittsburgh. Developed object segmentation algorithms, and higher order graph diffusion algorithms for classification of very large tissue images. Core algorithms and image processing features deployed in a software framework developed in house that is fully reentrant, multithreaded, and highly optimized for speed, memory performance, and IO latency.

DynaVox Inc., Senior Software Engineer, August 2010- March 2011 Responsible for Natural Language Processing framework deployed in educational and alternative communication products. Tools were integrated into event driven WinForm applications. Assisted in the development of language content database utilizing LINQ to SQL. Improved quality of word sense model using WordNet database. Implemented high performance splay-tree data structure for storing n-gram frequency data. Utilized Microsoft Patterns and Practices Library in several projects.

Omnyx LLC, Senior Software Engineer, October 2009-July 2010 Developed high performance distributed image processing framework and computer vision algorithms for digital pathology software in a .NET MVVM architecture. Lead architect and developer for certificate based WCF security solution that was successfully deployed at multiple hospitals and research centers. Implemented interface for third party scanners capable of ingesting Assisted in the design and characterization of petabyte scale distributed storage system. Participated in the commercialization and integration of proprietary wavelet based file format. Performed color calibration experiments.

Wavescholar Consulting LLC, Predictive Analytics Consultant, April 2009-September 2009 Commercialized graph spectra segmentation & clustering algorithms utilizing recent breakthroughs in SDP optimization. Algorithms were prototyped in Matlab and commercialized in C++. Ported Arpack to Intel Fortran 90, Arpack++, SDPA, and METIS libraries to VS9 with Intel BLAS.
Participated in various Imaging, Web, and ECM development projects.

Xerox Corp. (NYSE XRX), Senior Software Engineer July 2008- April 2009 Deployed and developed document and image classification technologies in a high volume distributed scanning application. Prototyped GPU based image processing and novel document classification algorithms. Resolved many software bugs related to memory management, image processing, .NET interop, and software configuration. Played a key role in migrating platform from .NET 2.0 to .NET 3.5. Converted deployment to Wix 3.0. Gained expert capabilities with EMC Dispatcher document classification and extraction platform. Evaluated and used multiple OCR technologies. Performance benchmarked and characterized numerous imaging and document classification algorithms. Played lead role in application architect for a large contract with India Tax Department. Assisted in sale of job, and exceeded automation throughput targets. Efforts resulted in six digit revenue gain.

Wavescholar Consulting LLC, Predictive Analytics Consultant, 2007-2008 Developed a high performance system for distributed financial analytics on basket ETFs & their derivatives using Townsend Analytics' .NET toolkit. Technologies for data and workflow management included SQL Server, MSMQ, ADO .NET, OLEDB DTC, and a service based architecture for deploying analytics. Technologies for analytics include wrappers for advanced memory management such as private Win32 heaps, AWE memory management, and interfaces to Intel IPP/MKL Libraries, Matlab, & Quantlib. Designed and implemented a multithreaded graph based algorithm workflow with smart pointer based results caching. Numerous NaN friendly, robust algorithms have been deployed on this framework. Real-time capabilities successfully demonstrated on the components of the SPY [500 dimensions] and IWM [2000 dimensions] simultaneously. Commercialized several machine vision applications prototyped in Matlab.

TissueInformatics Inc., Icoria Inc. (NASD: ICOR) / Clinical Data Inc. (NASD: CLDA) / Bioimagene Inc, Senior Machine Vision Developer 2004-2007 Developed pixel, object, tile, and slide level models for very large (2-4GB) biological images in the field of digital pathology. Performed hierarchical statistical analysis on data sets up to 10TB in size. Developed standard and proprietary machine learning and signal processing algorithms at all scales of analysis. Pixel and object algorithms were written in C++/Java and deployed to a CORBA/Oracle distributed computing platform. Tile and slide models were developed in Matlab and R. Acted as principal investigator on numerous disease models. Reduced expert training load in inter-grade scoring models based on pair wise vision experiments. Statistical results were incorporated into NIEHS and NIH studies.

LIPAM International Inc. Data Analyst, 2004-2008 Provided data analysis, statistical analysis, and GIS informatics in the domains of microfinance and mass privatization. Results were published in multiple professional journals.

Eastman Kodak Co. (NYSE: EK) Senior Software Engineer 1999-2004 Matured a commercial distributed image processing framework to CMM Level 3. Integrated and wrote complex image processing algorithms bringing the latest algorithms from R&D into existing software products. Solved difficult integration and optimization issues. Development efforts were cross platform on Win32, Solaris, and Linux and involved heavy use of OOP, C++, STL, and software patterns. Received recognition four times for rapidly solving critical customer issues. Redesigned core framework structure and integrated into existing code base. Aggressively sought out and exposed design and implementation issues before and after software release. Effectively communicated complex image processing, design, and integration issues to management and customers.

Software Consultant 1995-1999 Specialized in 2-tier client server database systems for using MFC, DAO, Visual Basic, Access, and SQL Server technologies. Designed and implemented genetic algorithm optimized neural network architectures for financial time series analysis. Deployed algorithms into MFC and Excel /OLE user applications. Collaborated with researchers at Santa Fe Institute and prototyped novel non-linear time series models based on thermodynamic scaling equations.

University of Rochester Mathematics Department PhD candidate 1992-1994 Developed and implemented graph

theoretical algorithms in C to compute stability properties of large systems of polynomial ODEs. Numerical stability studies of high dimensional reaction diffusion equations with complex chemical dynamics. Recognized twice for teaching abilities.

Bausch and Lomb Corp. R&D 1990-1992 Analyzed potential active ingredients in contact lens cleaners using SAS. Performed novel laser scattering studies of protein solutions to estimate size distributions and correlated those results with energy minimization calculations provided by molecular modeling software.

University of Rochester, Research Assistant 1988-1990 Superconductor Laboratory. Wrote Monte Carlo simulations in FORTRAN to study phase transitions in spin glasses and high Tc ceramic superconductors.

Awards & Recognition:
Eastman Kodak Image Science Career Development Program 2003-2004
Petroleum Research Council Fellow 1993-1994
Whittaker Prize in Mathematics 1992
Eldre Scholarship 1987-1991

Societies: AMS, SIAM, IEEE

Other: National Outdoor Leadership School Graduate