Curriculum Vitae

Rajeev Surati Ph.D.

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Profile: MIT PhD technologist in Electrical Engineering and Computer Science. Broad academic and business knowledge. Invented and patented several basic internet, computer-related, and display technologies and subsequently formed and sold companies based on these technologies to large corporations. Experienced with Internet(database backed web sites, search, e-commerce credit card implementation, instant messaging), compilers, and display technologies including projector-camera systems, peer-to-peer, instant messaging, pub sub systems, HTTP, TCP, UDP, affiliate marketing, click-through models, subscription models, search optimization, caching, relational database community-based web sites, social networking, computer graphics, digital image warping etc. Such work in these areas I have done is pioneering. Additionally, I have participated in standards processes. I have a great understanding of the history and evolution of many of the technologies in these areas. Having authored at least 6 patents and 2 others in process, been a participant in patent cases, and been the target of infringement in my businesses, I have a great working knowledge of both the importance and subtleties related to IP. Lastly, because I have founded 3 successful companies and sold 2 companies to both Microsoft and NameMedia(godaddy.com), and advised several other companies, I have extensive contacts in the industry and a business background that encompasses building a technology business from the ground up. I am experienced in writing code in C++, Java, C, Postscript, C#, etc

Expert Experience:

Worked on patent related cases for British Telecom, Apple, IBM, Triplay (against Facebook), Ford etc… as an expert related to e-commerce, telecommunication systems, database backed web sites, photography, real-time https, two-way and instant messaging. Have served as both a report writer and consultant on a multitude of cases, and been deposed in the process.Worked on copyright and trade secret case for a credit processing company, representing the Defendant. Worked on a breach of contract case for an audio company against a contract engineering firm. Delivered testimony in Federal Court on an Email case.

Education: **Massachusetts Institute of Technology** SB, 1992, SM, 1995, Ph.D.1999
GPA: SB 4.9/5.0 SM: 5.0/5.0 Ph.D. 5.0/5.0 all In Electrical Engineering and Computer Science

SB Thesis: *A Parallelizing Compiler Based on Partial Evaluation* – Dept. Thesis Prize (later)
          --Early Days of How to fill Floating Point Pipelines
SM Thesis: *An Object System Based on Partial Evaluation*
          --Getting Good Computation Throughput – with Abstraction
Ph.D. Thesis: *Scalable Technology for Large Scale Seamless Displays*
          --Making Massive Resolution Display a Reality

Employment: **Computation and Imaging**   **1/2015 – Present**
                 Position: President

Consultancy providing strategic and implementation services to companies related to IP and business Issues as well as product development.

Scalable Display Technologies   **1/2004 – October 2014**
Position: President, Chairman, and Co-Founder

World's leading provider of technologies to build and maintain seamless tiled large displays. Core technology in auto-calibration of large displays. Today the company is the worldwide leader in auto-calibration in the simulation and training space, largest provider of projector cam software on both an OEM and direct to customer basis with over 100,000 licenses sold worldwide. We have created a new class of products that has disrupted the high end of the market by over the last 10 years focussing on folding the cost of warping down from 10,000 dollars per channel to less then 100 dollars per channel The Technology is based on my Ph.D. thesis and seminal projector camera patents filed while at MIT in 1998. I program/product managed our relationships and software architecture integrating it with NVIDIA, AMD, NEC, Sony, etc based on them as both customers and product channels. We have opened up a huge market for new classes of products for which we are a key component. I also have developed our whiteboard strategy which is beginning to bear fruit delivering systems with NEC. I have been able to bridge the divide between Japan Brands and their technology focus to bring products to market with their sales organizations by acting as a business/product management intermediary.

Photo.net.   **7/2000-May 2007**
Position: President, Co-Founder, Chairman

Turned world's largest and best amateur photographer site from a simple forum site into a viable growing community based business along with Philip Greenspun. Ran a preLAMP stack based on AOLServer, tcl, and Oracle 9 with innovative features such as: photo-sharing, click through advertising, digital subscriptions for vanity purposes etc. Innovated very early business models in this space around subscriptions, clickthroughs, banner advertising, and revenue sharing. Sold business quite profitably to NameMedia in 2007. I ran it while running another startup.

Microsoft   **7/1999 - 7/2000**
Position: Software Development Engineer

Worked on Exchange 2000 IM Server and MSN Messenger.
Wrote patents on publish-subscribe architectures etc. Position created post sale of
Flash Communications Wrote in C++, used COM etc. XML etc.

Flash Communications   **2/1997 – 02/1998**
Position: CTO, Co-Founder
Founded company while in PhD program, developed market plan, core technology, and implementation targeted at a Microsoft acquisition. Built team, raised funding, and wrote designed product software with team. Company sold to Microsoft, prior to finishing my PhD thesis.

Oak Ridge National Lab
Position: Summer Intern
Spectroscopy Group building Lab- on-a-Chip.

MIT AI Lab   **9/1992 – 6/1998**
Position: Research Assistant
Worked with computer science and Electrical Engineering Professors:: Thomas F. Knight, Gerald Jay Sussman, and Hal Abelson on a wide variety of projects. Helped build an early VLIW computer architecture with HP and mainly designed a special software compiler that did register allocation, parallelization to fill floating point pipeline. I also worked on camera feedback based projector systems, and on projects in the early days of the web: HTTP, TCP, UDP, database backed web systems etc.

Naval Research Labs
Position: Summer Intern
Worked on wavelet decomposition and classification based on said decomposition of radar return signal in C/C++. Wrote visualization tools that dramatically improved the investigative cycle time. Lots of hacking with postscript to help visualize results.

Technology Hackers Inc   **6/1992-12/1992**
Position: Electrical Engineer
Built a 512 node 2D array of phased array microphones.

Microsoft   **6/1988-8/1988, 6/1999-9/1999**
Worked on Microsoft PC Client for Mail, Microsoft File, Microsoft Works (pre Windows).

Technology Advisory Boards   UnifySquare, Paneve (General Purpose Asic coupled with Compiler Technology), Nexaweb (Realtime Web Application framework using HTTPS), Antix Labs (Compiler Technology for universal gaming platform), Permabit (Content Addressable Storage), Evoque.

Awards: Department of Energy Computational Science Graduate Fellow 1995-97, William A Martin Thesis Prize for Best Undergraduate Thesis in Computer Science 1992, Global Indus Technovator Award 2009, Laureate of 2009 Computer World Honors Program, MIT 6.270 Lego Robot 1991 – Robot was named with Nuclear Capabilities on fields of RoboHockey.

Patents:

6,456,339	Super-resolution display
6,415,318	Inter-enterprise messaging system using bridgehead servers
6,260,148	Methods and systems for message forwarding and property notifications using electronic subscriptions
5,943,478	System for immediate popup messaging across the internet
8,817,111	System and method of calibrating a display system free of variation in system input resolution
9,215,455	System and method of calibrating a display system free of variation in system input resolution
8,994,757	System and method for providing improved display quality by display adjustment and image processing using optical feedback

Applications:

20100321382	System and Method for Injection Mapping of Functions
Provisional	System and Method for Calibrating a Display System Using Manual and Semi-Manual Techniques.
Provisional	System and Method for Color and Intensity Calibrating a Display System for Practical Usage
PCT/US2014/029402	System and method for calibrating a display system using a short throw camera

Systems Built (Individually or as part of a team):
Spambot: One of the Internet's first free to use Mailing List Servers that was database backed
Photo.net's photo sharing system: One of the first on the internet, and given rave reviews as one of the best systems out in 2003.
Photo.net's mobile WAP interface
MIT Supercomputing Toolkit: VLIW 8 processor system out of discrete electronic parts
Microsoft Exchange 2000 IM Server and MSN Messenger Service
Internet Coke Machine: 1993 – food transfer protocol (modified ftp server hooked up to micro-controlled coke machine)

Skills: C++, C, Scheme, TCL, C#, Java,SQL, dabbled in PERL, python, etc.], TCP and networking, image processing, firmware programming etc. Did Oracle DB management for photo.net. Very fast at learning enough to implement what I need done to solve a problem, E&M, machine vision, etc.

References: Available upon request.

Publications:
Partial Evaluation for Scientific Computing: The Supercomputer Toolkit Experience A. Berlin and R. Surati, Proc of ACM SIGPLAN Workshop on Partial Evaluation and Semantics-Based Program Manipulation, 1994

Exploiting the Parallelism Exposed by Partial Evaluation.
By: Rajeev J. Surati, Andrew A. Berlin
In: IFIP PACT, 1994

A Parallelizing Compiler Based on Partial Evaluation, MIT Artificial Intelligence Laboratory Technical Report, TR-1377, July, 1993

Invited Talks:
Ultra High Resolution Displays and Interactive Eye-point Using CUDA NVIDIA GPU Computing Conference 2010

Using the GPU to Create Seamless Displays from Multiple Projectors SIGGRAPH 2011 NVIDIA Presentation.

Seamless Scalable Displays - Using NVIDIA Warp + Intensity API NVIDIA GPU Computing Conference 2012

Using Warp and Blend API in Distributed and Single Renderer's / Update on Warping Standards with Bei Wang (Walt Disney Imagineering), NVIDIA GPU Computing Conference 2013

Mid-Tier VR: Cost Reducing the Cave by Embracing the GPU with Bei Wang – Walt Disney Imagineering, NVIDIA GPU Computing Conference 2014

Teaching:
MIT Teaching Assistant:
 6.001 Structure and Interpretation of Computer Programs (2 times),
 6.002 Circuits,
 6.013 Electro and Magneto Quasi-static Systems.
 ArsDigita University: Lecturer Probabilistic Systems.