

Jonathan D. Lettvin

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Profile

I enjoy team programming, including Agile/XP, with heavy unit-testing, code-coverage, comments, wiki documentation and a zero-bug policy. I like projects that use my experience and creativity to achieve solidly-designed, customer-pleasing, and revenue-generating results.

I've written high performance mathematically provable market feed lexers with complete error detection/recovery, feature extractors for high-noise poor-contrast images, entire Real-Time multitasking operating systems from scratch, boundary to volume conversion utilities, product-integrated antiviruses and integrity checkers, and much more.

Work Experience

08/2008 – 03/2009 **Zipix, Inc.** Chief Scientist

- Neural based image processing algorithms
- Cell phone embedded programming
- Noise reduction and feature enhancement
- Functional programming

02/2008 – 08/2008 **Investment Technology Group, Inc.** C++ mentor and programmer/architect

- High speed lexing
- Market feed analysis (Limit Order Book) towards hidden trade detection

03/2007 – 02/2008 **Soapstone Networks** Consulting Software Engineer

- Extreme programming (pair programming) for Provider Backbone Transport network controller software
- C++, Python, svn, sockets, IDL compiler, automatic code generation, client-server CLI, generic programming

06/2006 – 12/2006 **Bluefin Robotics**, software team member

- C++ coding and configuring for autonomous underwater vehicles (robotic submarines) navigation

09/2004 – 09/2005 **Alternative Energy Source** programmer/architect for NASA Manned Mission to Mars

- Developed BREP (Boundary Representation) to GEANT4 3D physics modeling converter
- Tested/predicted high energy particle hot-spots within spacecraft
- Architected/designed novel spatial mathematical transforms

03/1998 – 03/2002 **Lotus/IBM** principal software engineer

- Demonstrated java security, internet security, platform security, and transaction security methods
- Developed secure automated back-end ticketing code
- Managed worldwide antivirus strategy including coding, integration, support, manufacturing, and publicity
- Presented at and taught other companies needing security guidance
- Ported/Glued Lotus products to new platforms
- Architected high-performance XML lexer (21 iAPX86 instruction codepoint loop)
- Designed and implemented high-performance semantic compression code
- Ran worldwide "Data Security Working Group"
- Received "Outstanding Customer Service" award

09/1987 – 03/1998 **Lotus Development Corporation** Consulting Software Engineer

- Developed and shipped upgrade to METRO (best-selling DOS desktop pop-up program)
- Managed and implemented technical development on shoestring budget
- This was the last "bug-free" program Lotus ever shipped

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Work Experience

06/1985 – 09/1987 **Ecco Industries, Inc.** Director of Software Engineering

- Architected and wrote multitasking operating system supporting real-time voice biometrics

09/1984 – 06/1985 **Catalytix** Director of Software Migrations

- Ported “Safe C” interpreter to over 50 different brands of Unix

06/1983 – 09/1984 **Access Technology** Senior Software Engineer

- Ported Supercomp 20 spreadsheet to over 100 different brands of Unix
- Developed Supercomp 20 spreadsheet kernel

12/1981 – 03/1983 **Bell Laboratories (Murray Hill)** Member of Technical Staff

- Wrote dictionary code for Ada compiler

09/1978 – 09/1981 **MIT Plasma Fusion Center** Staff programmer

- Wrote finite difference engine for calculating magnetic field distortions in Tokamak energy ports
- Wrote full LISP emacs for ITS from scratch
- Wrote emacs-integrated video debugger for Multics
- Wrote automated code-generator/document-writer for Tokamak engineers

09/1977 – 09/1978 **SUNY Stonybrook** Staff programmer

- Developed techniques for calculating magnetic fields for MRI (Magnetic Resonance Imaging)

09/1976 – 09/1977 **University of Texas Health Science Center at Dallas** Staff

- Developed and published NMR contrast enhancement reagents with Dean Sherry [J. Magnetic Resonance 1977]

Education

09/1971 – 03/1976 **MIT** Bachelors degree in Physics

Skills Summary

C/C++/iAPX86 assembly	STL/boost	Svn
HTML/XML/CSS/Javascript	Doxygen/mediawiki	Gcov
Sockets (client/server)	IDL and IDL compilers	Market feed lexing
Mesh Functional Programming	Image processing	Neuron modeling
Antivirus/integrity/security	Real-time tasking and biometrics	Signal processing

Original Algorithms

Contrast invariance	Color constancy	Hyperacuity
Aberration inversion	Feature detection/coercion	Feature prediction
Noise reduction	Continuity detection	Market feed lexing
Semantic compression	Statistical integrity checking	XML/Unicode lexing
Automated code generation	BREP to GEANT4 conversion	Optimized virus search algorithm
Dynamic charge distribution	Magnetic field distortion calculation	File-system design
Multicast block reassembly	Biometric token management	Real-time OS design

Patents

5559960 Software anti-virus facility	20050036655 Imaging System
5826012 Boot-time anti-virus and maintenance facility	20050104632 Geometric remapping with delay lines