

Jonathan D. Lettvin

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Objective

Small fast correct secure C++ implementation for high-value products or projects.

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.

Skills Summary

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|--------------------------------|------------------------|----------------------|
| ♦ C/C++/iAPX86 assembly | ♦ STL/boost | ♦ svn |
| ♦ HTML/XML/CSS/Javascript | ♦ Doxygen/mediawiki | ♦ gcov |
| ♦ Sockets (client/server) | ♦ IDL | ♦ Market feed lexing |
| ♦ Mesh ODE/PDE and relaxation | ♦ Image processing | ♦ Neuron modeling |
| ♦ Antivirus/integrity/security | ♦ Real-time biometrics | ♦ Signal processing |

Professional Experience

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 |
| ♦ Dynamic Charge Distribution | ♦ Magnetic Field Distortion | ♦ 2D to 3D conversion |
| ♦ Multicast Block Reassembly | ♦ Biometric Token Management | ♦ Real-Time OS Design |

OBJECT ORIENTED PROGRAMMING

- ♦ Market Analytics algorithms (under development)
- ♦ Vertebrate retinal emulation for image processing as foundation code for a startup (patent pending)
- ♦ BATS Pitch Market feed lexer to improve database filling speed by a factor of 15 used for hidden trade detection
- ♦ IDL compiler using boost to support Provider Backbone Transport network controller software
- ♦ Through-the-wall imaging using ambient acoustic and electromagnetic signals (patent pending)
- ♦ Finite difference cytoskeletal water-ordering models
- ♦ Navigation, sensor, and control software for an AUV (Autonomous Underwater Vehicle)
- ♦ NASA BREP to GEANT4 conversion to support Manned Mission to Mars radiation dose calculation
- ♦ High-volume high-redundancy multicast OS patch delivery application

PROCEDURAL PROGRAMMING

- ♦ Secure back-end ticketing
- ♦ Optimized (21 instruction) XML Unicode (all 13 stream types) conversion/lexing
- ♦ High-performance semantic compressor for intel iAPX86 instruction set
- ♦ Intel iAPX86 executable disassembler autodetecting for all chips up to Pentium II
- ♦ Product integrated novel virus search algorithm antivirus and integrity checker
- ♦ Original Real Time Operating System to support voice biometrics
- ♦ Dictionary for breadboard Ada compiler
- ♦ Tokamak energy port magnetic field distortion calculation
- ♦ Automated FORTRAN generator as Emacs extension
- ♦ Full LISP emacs from scratch matching extension language to Multics Emacs
- ♦ Video debugger (proboscis) extension to Multics Emacs

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Employment History

8/2008 – 3/2009 ZIPIX - Burlington, MA, founder
2/2008 – 8/2008 ITG - Boston, MA, C++ mentor and programmer/architect
3/2007 – 2/2008 SOAPSTONE - Billerica, MA, consulting software engineer
6/2006 – 12/2006 BLUEFIN ROBOTICS – Cambridge, MA, programmer
9/2004 – 9/2005 AES - Boston, MA, consulting software engineer
3/2002 – 2/2008 LETTVIN - Watertown, MA, consulting software engineer
3/1988 – 2/2002 LOTUS/IBM - Cambridge, MA, principal/advisory software engineer
9/1987 – 3/1998 LOTUS - Cambridge, MA, consulting software engineer
6/1985 – 9/1987 ECCO - Danvers, MA, director of software engineering
9/1984 – 6/1985 CATALYTIX - Brookline, MA, director of software migrations
6/1983 – 9/1984 ACCESS TECHNOLOGY – South Natick, MA, senior software engineer
12/1981 – 3/1983 BELL LABORATORIES – Murray Hill, NJ, member of technical staff
9/1978 – 9/1981 MIT PLASMA FUSION CENTER - Cambridge, MA, staff
9/1976 – 9/1977 UNIVERSITY OF TEXAS HSC AT DALLAS - Dallas, TX, staff

Education

9/1971 – 3/1976 MIT - Cambridge, MA, Physics BS 1976

References

Available upon request

Web Presence

(These are a mix of personal and public pages where I have made recent edits)

<http://jonathan.lettvin.info>
<http://daynightlamp.com>
<http://www.aneuran.com>
<http://biosfont.sourceforge.net>
http://en.wikipedia.org/wiki/Jerome_Lettvin
<http://jerry.lettvin.info>
<http://theodore.lettvin.info>
<http://lettvin.com/private>

Patents

Issued

[5559960](#) Software anti-virus facility
[5826012](#) Boot-time anti-virus and maintenance facility

Pending

[20050036655](#) Imaging System
[20050104632](#) Geometric remapping with delay lines