

# J. Thomas Eck

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**Professional Profile** Expert at critical thinking to produce new and unique methods to solve complex issues and processes. Comprehensive education and experience with commercial business and computational pharmaceutical research projects and deliverables. High energy individual contributor as well as team leader to formulate useful strategies on positioning and leveraging information for systems based commercial success. Reliability, innovation, clear communications, mobilizing others and a high expectation of me and others are some leadership trademarks. The overall benefit of my efforts is day to day high performance to create and produce value work and make a measurable difference for my internal and external customers.

**Education** 2007-2011 (expected) Rutgers University

**Ph.D. COMPUTATIONAL BIOLOGY AND MOLECULAR BIOPHYSICS**

- GPA 4.0

2003 – 2005 University of Pennsylvania

**M.B. MASTER OF BIOTECHNOLOGY**

**Concentration in Computational Biology and Bioinformatics**

- GPA 4.0
- Independent research led to publication in *J. Genome Research*

2002 Massachusetts Institute of Technology

**COMPUTATIONAL BIOLOGY AND BIOINFORMATICS**

- MIT Professional Institute program

1989-1991 New Jersey Institute of Technology

**M.S. COMPUTER SCIENCE**

- GPA 4.0
- Independent research led to publication in *Inter. J. Information Sciences*

1985-1989 Boston College

**B.S. CHEMISTRY**

- Concentration in Computer Science
- Pre-medical program

**Professional  
Experience**

2007-present

Arnold Laboratory

Rutgers University  
New Brunswick, NJ

**Graduate Assistant**

- Developing algorithms and software to quantify the three-dimensional shapes of drug-like molecular fragments
- Developing software to optimize the shape diversity of molecular fragments when selecting a fragment library for high-throughput screening

2006-2007

Penn Genomics Institute  
University of Pennsylvania  
Philadelphia, PA

**Sr. Programmer/Analyst**

- Developed tools and algorithms for building and analyzing phylogenetic trees
- Introduced industry standard software engineering processes to the lab

2005-2006

Wistar Institute  
Systems Biology Lab  
Philadelphia, PA

**Computational Biologist**

- Developed multi-scale simulations of cancer and models for various biochemical and cellular mechanisms
- Results of the multi-scale simulations will be presented at a modeling conference later this year and submitted for publication

2005

Wistar Institute  
Proteomics Lab  
Philadelphia, PA

**Computational Biologist**

- Designed and developed workflow and data analysis software to support a serum biomarker discovery project
- Developed novel techniques for analyzing mass spectroscopy spectra

2004-2005

University of Pennsylvania  
Penn. Center for Bioinformatics

Philadelphia, PA

**Computational Biologist**

- Developed a novel algorithm (*STAC*) for identifying significant chromosomal copy number aberrations conserved across multiple samples
- This effort led to the publication of the *STAC* algorithm in *J. Genome Research*

2004 - 2008                      Microsoft/Merrill Lynch                      Hopewell, NJ

**Senior Software Architect and Developer**

- Provide guidance, design oversight and development skills to the core architecture group at Merrill Lynch's Global Private Client division
- Developed the Web Service and Web Site security infrastructure on which all GPC applications run
- Led the development of a major distributed communications project that will improve communications for 50,000 brokers worldwide
- Technologies: Microsoft .NET, C#, ADO.NET, ASP.NET, Web Services, MS SQL Server, MS ADFS, MS Live Server, Federated Security

2001 - 2004                      The Associated Press                      Cranbury, NJ

**Senior Software Architect, Senior Development Manager**

- Architect, Designer, and Development Manager for the largest e-commerce project the company has ever embarked upon. This system facilitates the placement of over \$2B/year of advertising in thousands of independent and affiliated newspapers.
- Designer, Chief Development Manager, and Team Leader for the overhaul of the company's entire internal news production and delivery systems. This massive effort touches every aspect of the business and involves the reengineering of every core system at this 150-year old company.
- Technologies: Microsoft .NET, C#, C++, Java, ADO.NET, ASP.NET, MS SQL Server, XML, Web Services, .NET Remoting, MS BizTalk, UML

1999 - 2001                      Micro-Teck Consulting, Inc.                      Wall Twp., NJ

**Consultant**

- **Associated Press** – Project Manager/Chief Architect/C++ developer – responsible for re-engineering the infrastructure of a \$20M. Internet-based communication service
  - Technologies: C++, COM+, MSMQ, MS SQL Server, IIS, ASP, ADO
- **Bank of New York** – Software Architect and C++ developer – implemented interfaces between PC-based trading systems and mainframes, reengineered the messaging layer of a large-scale distributed brokerage system, provided integration between the company's flagship trading system and customers' in-house systems
  - Technologies: C++, COM+, MSMQ, MS SQL Server, TCP/IP, SNA Server, Visual Basic

1997 -1998                      World-Link Telecom, Inc.                      New York, NY

**Director of Technology/Director of IP Services**

- Managed the research and development efforts of this global telecommunications company which provides a variety of traditional and cutting-edge telecommunication products to an international customer base
- Technologies: C++, COM+, MS SQL Server, IIS, ASP, ADO, T1- E1- and ISDN- voice and data protocols, Dialogic hardware, Central Office and

PBX switches

1995 - 2001                      SimpleNet, Inc.                      New York, NY

**President and Founder**

- Sole founder of this million dollar company which provides Internet-based communications services including IP faxing, fax-to-email, fax broadcast, Voice over IP (VoIP), Unified Messaging, and e-mail marketing services
- Solely responsible for designing and developing the first generations of the company's telecommunications, database, billing, and administrative core systems
- Technologies: C++, ASP, IIS, DCOM, MS SQL Server, ASP, MTS

1992 - 1994                      Micro-Teck Consulting, Inc.                      Ocean Twp., NJ

**Consultant**

- **Xpedite Systems** – provided C++ development and application integration services for the global leader in fax broadcast services; implemented custom interfaces to some of the company's largest customers including IBM, Sealand, World Bank, and American Century Mutual Funds
  - Technologies: C++, DCOM, TCP/IP, MFC, Lotus Notes, custom communication protocols
- **CompuCare Systems** – designed and developed a distributed healthcare information system based on Lotus Notes and C++
  - Technologies: Lotus Notes, C++, modem and serial communications
- **World-Link, Inc.** – reengineered, designed, and implemented the conversion of this telecommunication company's core telephony and billing systems from a UNIX platform to a Windows NT/MS DNA platform; this was one of the first successful implementations of large-scale telephony on a Microsoft platform
  - Technologies: C++, DCOM, IIS, ASP, ADO, TCP/IP, MS SQL Server, Dialogic hardware, T1-, E1, SS7-signaling, Siemens central office switches

1991 - 1994                      Associated Press                      Cranbury, NJ

**Senior Engineer and Project Manager**

- Designed and developed a variety of communications products related to the newspaper industry including:
  - APServer – the first wide scale implementation of an image editing, asset management, and news transmission system that ran solely on a PC
  - AdSEND – implemented the first generation of this highly successful digital advertisement delivery system
- Technologies: C++, object databases, TCP/IP communications, serial communications, SCSI protocol, satellite interface protocols, high-speed image manipulation, system-level and network programming on a variety of operating systems including IBM OS/2, Microsoft Windows NT, and IBM AIX/UNIX

1989 - 1991                      Syport Systems, Inc.                      Middletown, NJ

**Consultant**

- **Department of Defense – U.S. Army CECOM – Center for Electronic Warfare/Reconnaissance, Surveillance, and Target Acquisition**
  - Led the research and development of a project that involved pattern recognition, speech processing, digital signal processing, and systems integration.
  - The system was demonstrated to have greater than 97% accuracy.
- **Department of Energy – Princeton University Plasma Fusion Laboratory**
  - Developed instrumentation control systems for a Tokamak nuclear fusion reactor
  - Developed a neural network for optimizing the configuration of the reactor's numerous parameters for optimal power, heat, or containment time.

1987 - 1989                      Ebasco Services                      Lyndhurst, NJ

**Programmer**

- Developed simulators to model the flow of fluids through various soil compositions

**Patents and publications**

Eck, JT. Pattern Discovery in Multi-experiment Data sets with Significance Testing, U.S. Patent Pending, 2005.

Diskin SJ, Eck JT, et al. STAC: A method for testing the significance of DNA copy-number aberrations across multiple array-CGH experiments. J. Genome Research, vol 16, pp. 1149-1158, Sept. 2006.

Lagin L, Eck JT. Application of Neural Networks for Real-Time Calculations of Plasma Equilibrium Parameters for PBX-M. Proc. 17<sup>th</sup> Symp. On Fusion Technology 1992.

Eck JT, Shih F. An Automatic Text-Free Speaker Recognition System Based on an Enhanced ART 2 Architecture. Inter. Journal of Information Sciences, vol. 76, no. 3, pp. 233-253, Dec. 1993.

**Presentations and Awards**

NIH Interdisciplinary Research Workforce Training Grant, 2008

Annual NJ Cancer Retreat, Piscataway, NJ, May 28, 2008

EITC Workshop on Bioinformatics and Biomedical Research, Princeton, NJ, June 7, 2008

NIH Multiscale Modeling Consortium Meeting, Bethesda, MD, April 11-12, 2007

Pennsylvania Molecular Screening Summit, Hershey, PA, April 13, 2005

Pennsylvania Genomics Institute Seed Grant Award Winner, 2004

**Professional  
memberships**

IEEE

IEEE Computer Society

IEEE Computational Intelligence Society