

Eric Bergerson

Objective Technologies Inc.

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TECHNICAL SUMMARY

- 20+ years of professional software development experience
- 20+ years of experience in hands-on management of software projects and products
- Hands-on management of predictive analytics / data science teams
- Hard-core programmer
- Designed, architected, and implemented systems in B2B, SaaS, Financial Services, and Health Care vertical markets
- Designed, architected, implemented, marketed and sold 12 different shrink-wrap software products
- Expert in object-oriented analysis, design and implementation, working in Java, Objective-C and C++
- Mentored, teach, and lecture on object-oriented development, general programming, and financial services development
- M.S and B.S. in Electrical Engineering from University of Rhode Island and Carnegie Mellon University, respectively

PROJECT AND PRODUCT EXPERIENCE

Blue Square Wealth, Employee

January 2018 – June 2021

Description: Chief Technology Officer responsible for all technology issues
Role: C-Level Management, System Design & Implementation
Languages: Python
Projects:

- Implementation of production systems implementing proprietary investment strategies
- Integration of all systems with the full RIA technology stack
 - Including: Salesforce, Y-Charts, Black Diamond, Pardot, MailChimp, AWS
- Ensured SEC compliance in our systems and procedures
- Prepared company for Work-at-Home in advance of March 2020 diaspora
- Led operational efforts to streamline business processes

Results: All projects successfully met corporate expectations

TickerTags.com, Employee

July 2015 – June 2017

Description: Direct research efforts, Develop predictive analytics for alignment of social content to investable assets
Role: Primary Researcher and Developer
Languages: Python, Java
Projects:

- Semantic classification of the meaning of an n-gram in social content
- Spam classification of tweets using meta data
- Sentiment analysis of twitter content driven by Parts of Speech
- Functional programming styled framework for pandas based pre-processing
- Framework for grid analysis of models and parametric scenarios across the same data
- API for customers to access live updates of company generated statistics and analytics
- Researched and defended the predictive power of company data through a Granger analysis
- Researched deconstruction of time series signals in to trend, seasonality and residual components

Results: All projects successfully met corporate expectations

Vendavo, Inc., Employee

September 2012 – December 2014

Description: Develop predictive analytics for Cross Sell Recommendation and Customer Defection
Project Goal: Research and demonstrate algorithmic approaches to identifying customer defection and for recommendation of products as cross-sell opportunities.
Role: Customer Defection (Primary Data Scientist), Cross Sell Recommendation (Managing Data Scientist)
Languages: R
Responsibilities:

- Develop proof-of-concept algorithms for concept exhibition at Vendavo's customer conference.
- Principal data scientist utilizing survival analysis and logistic regression to identify defecting customers.
- Manage data scientist developing a cross sell recommendation engine utilizing latent semantic analysis

Results: Positive feedback on results from select customers asked to evaluate algorithmic results on their data

Sesco PJM Strategy, LLC, Employee

January 2011 – October 2011

Description: Proprietary trading of electric power using automated algorithmic strategies
Project Goal: Conceive algorithmic strategies for revenue generation through the trading of electric power.
Design, implement, and deploy production systems to trade these strategies.

Role: Responsible for all aspects of project lifecycle from conception to production of trading systems
Languages: Java
Development Environment: Mac OS X, Java 1.6, Oracle DB and Coherence, JBoss, IntelliJ IDEA
Deployment Environment: RedHat Linux, Oracle DB and Coherence, JBoss
Responsibilities:

- Conceive, brainstorm, and develop electric power trading strategies
- Design, architect, implement, and deploy trading systems for proprietary strategies
- Design, architect, and implement systems for programmatic testing and trading of algorithmic strategies
- Research, back-test, and tune implemented strategies targeted for production trading

Results: Proprietary to Employer

Objective Technologies Inc., Employee

February 2002 – Present

Description: General software development consulting with an emphasis on Financial Services

Projects:

TickerTags.com, May 2015 – July 2015, Consultant

Description: Demonstrate leadership capability for driving research efforts and individual ability to develop predictive analytics in support of the company's objectives.
Role: Lead Researcher, Data Scientist
Languages: Python, Wolfram Language
Development Environment: Mac OS X, *Mathematica*, *PyCharm*, *AWS*
Responsibilities:

- Structure the processes and tools needed for the team to work together collaboratively
- Research and implement a methodology for classifying the meaning of words within a particular context

Results: The results of the work convinced the founders of the company to offer a fulltime position as Director of Research

Vendavo, Inc., March 2012 – September 2012, Consultant

Description: Research and demonstrate a proof-of-concept implementation of an automated algorithm for finding underperforming revenue and margin sectors in enterprise invoice data.
Role: Data Scientist
Languages: Wolfram Language
Development Environment: Mac OS X, *Mathematica*
Responsibilities:

- Work with domain experts to understand Vendavo's current proprietary IP
- Identify the IP most applicable to full automation
- Research and implement a fully automatic proof-of-concept system for identifying underperforming sectors

Results: The results from the project convinced the Board of Directors to expand the product line to include insightful analysis

Sesco Enterprises LLC, November 2004 – December 2010, Consultant

Description: Electric Power Trading Company
Role: Analyst, architect and programmer
Languages: Java
Development Environment: Mac OS X, Windows XP, Java 4, 5, 6, IntelliJ IDEA, MySQL, JBoss, Oracle DB and Coherence
Deployment Environment: Mac OS X, Windows XP, Linux (RedHat), MySQL, JBoss, Oracle DB and Coherence
Projects:

- Java Swing component framework for interacting with tabular data as a replacement to JTable
- End-user application viewing electric power trading data in a geo-spatial representation
- End-user pane for viewing electric power trading data in a network centric representation
- End-user application for general back/mid office support of trading
- End-user pane for data entry and fulfillment of PJM Oasis transmission trades
- Custom representation of the electric grid as described in P/SSE and supporting files
- Numerous jobs, algorithms, and processes for parsing, storing, retrieving and analyzing trading data
- Numerous Swing tools, components, and foundation classes used to support the development of trading systems and front-end applications

- Extensive analytics for evaluating relationships between trading data statistically, heuristically and analytically

Results:

All client assignments successfully fulfilled

West End Financial Advisors, July 2003 – August 2004, Consultant

Description: Hedge Fund

Project Goal: Analyze equity investment strategy, propose improvements, implement and deploy technical systems to support improvements

Role: Analyst, architect, and programmer

Languages: Java, SQL, HTML, Excel, Mathematica

Development Environment: Windows XP Pro, WebObjects, MySQL, Java 2 v 1.4, IntelliJ IDEA, Emacs

Deployment Environment: Linux (GenToo), WebObjects, MySQL, Java 2 v 1.4

Responsibilities: Provide expertise in system development, financial quantitative analysis and critical thinking:

- Investment strategy analysis:
 - Interview all internal and external participants in fund investment strategy
 - Participate in internal investment strategy meetings
 - Identify areas for improvement
- Financial theory and research:
 - Provide theoretical advice related to options theory, hedging and margin
 - Provide quantitative modeling in both Excel and Mathematica
- Custom Software Development – Propose architect, implement and deploy:
 - System for identification of market opportunities that meet the requirements of the fund's investment strategy, including:
 - Opportunity Knocks – A server process that analyzes the domestic equity market to identify option spreads that meet pre-determined profiles
 - OKWeb – A web-based application for creating, managing and scheduling jobs for analysis by Opportunity Knocks
 - Real time data feed API – Interface layer providing real-time market data support for multiple data vendors. Initially supported Comstock XpressFeed
 - MySql utilized for both Opportunity Knocks and OKWeb as an object-oriented persistent store
 - Excel Output – All final output is provided, via the web, as Excel reports
 - System for extraction and manipulation of historical data
 - Extracts data from FAME, massages it through a series of custom functions and stores the data in MySql

Results: All client assignments successfully fulfilled. All production systems are up and running.

The Church Pension Fund, April 2002 – June 2003, Consultant

Description: Pension Fund, Insurance

Project Goal: Develop tools for cleaning data from all business units in preparation for integration via a central database

Role: Architect, programmer

Languages: Java, SQL, HTML, Python

Development Environment: Windows XP Pro, Apache Tomcat, MySQL, Java 2 v 1.4, IntelliJ IDEA, Emacs

Deployment Environment: Windows XP Pro, Apache Tomcat, MySQL, Java 2 v 1.4

Responsibilities:

- Design and implement the Data Review System for cleaning corporate data, including:
- A configurable rule-based program for conforming data to a corporate standard
- A configurable algorithmic application for identifying duplicate rows within a data set and identifying matching rows between data sets
- Distributed Servlet-based web applications for reviewing proposed changes and matches by the automated systems by the business units

Scope: ~35,000 lines of Java code, ~12,000 lines of documentation

Results: Completed eight projects on or before schedule, exceeding the required features for each project

Noggin.com/The-N.com, March 2002, Consultant

Description: Noggin.com and The-N.com are web sites that tie into the Noggin.com cable channel. The sites utilize many different integrated technologies that are tied together on an underlying set of web applications that handle all of the inter-application communication, authentication, and management of persistent data.

Project Goal: Re-architect the site for a new version rollout, which includes splitting the original Noggin.com site into two distinct sites, Noggin.com and The-N.com that can have a totally different look and feel generated by the common system of web-application and support systems.

Role: Architect, programmer

Languages: Java, SQL

Middleware: WebObjects

Development Environment: Windows XP, WebObjects, IntelliJ IDEA, Emacs, Solaris servers with Oracle, SMTP, and CVS

Deployment Environment: Solaris, Oracle

Responsibilities:

- Re-architect and implement improved authentication systems, including peer APIs for Flash integration
- Re-factor and improve core foundations
- Implement new web-based authentication app for both sites
- Implement smut filters to prevent inappropriate language use

Results: All client assignments fulfilled on-time and within budget

TIAA-CREF, February 2002, Consultant

Description: TIAA-CREF utilizes a large number of web-based apps that manage persistent authentication and session information in a three-tier system. The middle tier consists of two common repositories for authentication and session information that are accessed by all of the other applications. These applications are accessed via a variety of different inter-application communication protocols serviced in multiple threads.

Project Goal: Analyze and improve the middle tier applications for better performance, especially issues arising out of the use of multiple threads

Role: Debugger, architect, programmer

Languages: Objective-C

Middleware: WebObjects

Development Environment: Windows NT, WebObjects

Deployment Environment: Web, Windows NT, Mainframe

Responsibilities:

- Rigorous examination of current systems
- Implement applications to drive experimental testing for comparison with base-line measurements
- Improve code where appropriate
- Defend all choices with measured results and/or well-supported reasoning
- Fully test new applications
- Analyze risks/rewards of utilizing new middle-tier

Results: All client assignments fulfilled on-time and within budget

Ukibi, Inc., Employee*July 1999 – July 2001*

Description: Web-based application service provider of contact management engines

Project Goal: Produce systems for accessing, synchronizing and distributing contact management information over a broad range of mediums, including web, wireless, and PDA technologies. Systems designed to be provided as a service, such that all functionality appears to be part of customer's proprietary product offerings

Role: Architect, programmer

Languages: Objective-C, SQL, HTML, WML, XML

Middleware: WebObjects, WAPObjects, SyncML

Development Environment: Mac OS X Server 1.2

Deployment Environment: UNIX, Solaris, Oracle

Responsibilities:

- Design and architect entire system, from business objects through user-interface
- Implement core foundation of business objects to represent the domain
- Implement first release of the WebObjects-based version of the foundation web application for the system
- Implement first and second major releases of the WAPObjects based version of the system, providing access to contact management information via cell phones and other wireless devices
- Design and manage an internet-time release process resulting in a quality assured minor release of the system every two weeks

Results: Produced the primary product offerings for Ukibi, Inc. worldwide

LGS Systems, Inc., Employee*September 1996 – July 1999*

Description: Markets Practice Management Systems for use by medical practices and groups

Project Goal: Produce a full service practice management system, which handles the administrative, clinical, and billing requirements of a Medical Group. Must be scalable from small offices to distributed groups with thousands of locations and tens of thousands of doctors. Must be very simple to learn (5 – 10 minutes of training for front office staff). Must be database independent and web-ready

Role: Architect, programmer

Languages: Objective-C

Middleware: Enterprise Object Framework, Foundation Framework, Yellow-box

Development Environment: OpenStep, OpenBase

Deployment Environment: Windows NT or OpenStep, OpenBase

Responsibilities:

- Design and architecture of entire system
- Implementation of various systems
- Implementation of scheduling system, including database, business objects, functional systems and UI

Results: Produced the primary product offerings for Ukibi, Inc. worldwide

Objective Technologies Inc., Employee*July 1990 – September 1996*

Description: Financial Services consulting. Independent software vendor of development tools, database access tools and applications.

Projects:**Republic Bank – Mortgage Analytics Group**

Description: Department responsible for producing analytics for trading mortgages

Project Goal: Develop a system for distributed asynchronous distribution of calculation services

Role: Architect, programmer

Languages: Objective-C

Middleware: Portable Distributed Objects, Foundation Framework

Development Environment: OpenStep/NeXTSTEP

Deployment Environment: Solaris, NeXT

Responsibilities: Design, architecture and implementation of entire project

Results: All client assignments fulfilled on-time and within budget

Williams Energy – Commodity Trading Group

Description: Department responsible for trading energy commodity securities
Project Goal: Develop a full trading system, including display of real-time market data and management of trader / corporate portfolio
Role: Architect, programmer
Languages: Objective-C
Middleware: OTI's Palettes, NeXTSTEP
Development Environment: NeXTSTEP
Deployment Environment: NeXT
Responsibilities:

- Design, architect, and implement the project
- Mentoring of Williams Energy staff in object oriented development

Results: All client assignments fulfilled on-time and within budget

Phibro Energy – Commodity Trading Company

Description: Financial Services company dedicated to energy commodities
Project Goal: Develop the core contact management application as the foundation for a company-wide trading system
Role: Architect, programmer
Languages: Objective-C
Middleware: OTI's Palettes, NeXTSTEP
Development Environment: NeXTSTEP
Deployment Environment: NeXT
Responsibilities:

- Design, architect, and implement the project
- Mentoring of Phibro Energy staff

Results: Project was originally given to a competitor who did not produce any usable work in 3 months. Delivered the project on time and on budget within 3 weeks.

Lehman Brothers – Sugar Trading Desk

Description: Department dedicated to trading sugar commodities
Project Goal: Develop a framework for integration of Mathematica™ into NeXTSTEP applications
Role: Architect, programmer
Languages: Objective-C
Middleware: NeXTSTEP
Development Environment: NeXTSTEP
Deployment Environment: NeXT
Responsibilities:

- Design, architect, and implement the project
- Mentoring of Lehman Brothers staff on general development methodologies and integration of the framework into their applications

Results: Resulting framework became OTI's shrink-wrapped developer tool product, MathPalette™

William Morris Agency

Description: Premier worldwide talent agency
Project Goal: Develop a system patch that ensures ALL documents printed from any NeXT computer on their vast network include a non-intrusive pervasive watermark that clearly shows who printed the document and when the document was printed.
Languages: Objective-C
Middleware: NeXTSTEP
Development Environment: NeXTSTEP
Deployment Environment: NeXT
Responsibilities:

- Design, architect, and implement the project

Results: All client assignments fulfilled on-time and within budget

Lehman Brothers – Foreign Exchange

Description: Department dedicated to trading foreign exchange commodities
Project Goal: Fix problems in existing analytics application
Languages: C
Development Environment: SunOS
Deployment Environment: SunOS
Responsibilities: Programming
Results: All client assignments fulfilled on-time and within budget

Graph Palette™

Description: Palette for NeXT's Interface Builder development tool
Project Goal: Develop a user interface widget for displaying and interacting with multi-range, single-domain, two-dimensional graphs
Role: Architect, programmer
Languages: Objective-C
Middleware: NeXTSTEP
Development Environment: NeXTSTEP
Deployment Environment: NeXT
Responsibilities: Design, architect, and implement the project
Results: Resulting palette became OTI's shrink-wrap developer tool product, GraphPalette™

Chooser Palette™

Description: Palette for NeXT's Interface Builder development tool
Project Goal: Develop a user interface widget for displaying and interacting with lists of data.
Role: Architect, programmer
Languages: Objective-C
Middleware: NeXTSTEP
Development Environment: NeXTSTEP
Deployment Environment: NeXT
Responsibilities: Design, architect, and implement the project
Results: Resulting palette became OTI's shrink-wrap developer tool product, ChooserPalette™

OTStringKit™

Description: ObjectKit for NeXT's Interface Builder development tool
Project Goal: An object oriented implementation of the standard C *strings.h* interface
Role: Architect, programmer
Languages: Objective-C
Middleware: NeXTSTEP
Development Environment: NeXTSTEP
Deployment Environment: NeXT
Responsibilities: Design, architect, and implement the project
Results: Resulting palette became OTI's shrink-wrap developer tool product, OTStringKit™

Description: Systems Analyst in the Equity Arbitrage department, responsible for program trading, options trading and new product development
Role: Architect, programmer
Responsibilities: Design, architect, and implement the project

Projects:

The Electronic Portfolio Management System (EPMS)

Project Goal: Develop a set of applications for distributed parsing, maintaining, evaluating, and executing program trades of baskets with a typical valuation of between \$300 and \$500 million dollars
Languages: C++
Environment: SunOS, Sybase

The Security Object Library (SOL)

Project Goal: Develop a generic class library of business and systems objects for developing financial trading systems Forms the foundation of the EPMS
Languages: C++
Environment: SunOS, Sybase

The EPMS Client Site System

Project Goal: Develop a PC based system to allow Lehman's clients to monitor and interact with Lehman's EPMS services
Languages: C, C-Worthy
Environment: DOS

The [USU](#) Real Time Trading Station

Project Goal: Develop a system to provide traders with a real-time trading environment for making a market in Lehman's proposed Unbundled Stock Unit security
Languages: C, C-Worthy
Environment: DOS

The [USU](#) Historical Study

Project Goal: Develop a collection of analytics and support programs to analyze the theoretical historical performance of the Unbundled Stock Unit security. The project required analysis of the entire price history of the NYSE
Languages: C
Environment: SunOS, Sybase

Analytics

Project Goal: Develop a collection of analytics to support trading including the Black-Scholes Option Pricing Model and the Cox-Rubinstein Binomial Option Pricing Model
Languages: C
Environment: SunOS, Sybase

EDUCATION

University of Rhode Island, Kingston, RI

Master of Science in Electrical Engineering, Graduated May, 1988

Carnegie-Mellon University, Pittsburgh, PA

Bachelor of Science in Electrical Engineering, Graduated May, 1986

SKILLS

Research Environments: R, Wolfram Language (*Mathematica*), OxDATA H2O
Computer Languages: Objective-C, Java, C, C++, SQL, Prolog, Pascal, Fortran, Lisp, Basic, OPS5, Assembly
Operating Systems: Mac OS X, UNIX/Linux, Windows, MS-DOS, VMS, AOS, RSTS/E, TOPS20, APPLEDOS
Hardware Experience: Apple, PC, NeXT, Sun Microsystems, DEC VAX
Toolkits: Swing, J2EE, JDBC, Coherence, WebObjects, EOF, Cocoa, WAP, SyncML

PUBLICATIONS

- Automated 3D Reconstruction of Tree-Like Structures from Two Orthogonal Views, **Proceedings of the International Conference on Acoustics, Speech, and Signal Processing**, New York, 1988 (with Dr. Ying Sun)
- Automated 3D Reconstruction of Vascular Structure from Biplane Angiograms, **The 23rd Meeting & Exposition of the Association for the Advancement of Medical Instrumentation**, Washington, D.C., May, 1988 (with Dr. Ying Sun)

PATENTS

- Bergerson, Eric; Cowen, Thomas Sean; Kurka, Megan. 2014. U.S. Patent Application
 - **Systems and Methods for Price Point Analysis**, [20140214492](#)
 - **Systems and Methods for Waterfall Adjustment Analysis**, [20140214493](#)
- Bergerson, Eric; Kurka, Megan; Qu, Huashuai; Ryzhov, Ilya O.; Fu, Michael C. 2016. U. S. Patent **Systems and Methods for Optimal Bidding in a Business to Business Environment**, [10937087](#)

PRESS

1. [Laurel Hollow team partners with Stony Brook University in Madagascar](#), TBR NewsMedia, June 23, 2017
2. [Software Made Simple](#), BusinessWeek, September 30, 1992, Cover & pp. 92 - 100.
3. *The Object Game*, **NEXTWORLD**, Fall 1992, pp. 11, 14.
4. *Mission Control*, **NEXTWORLD**, Fall 1992, pp. 11, 14.
5. *The NeXT Wave On Wall Street*, **Wall Street & Technology**, June 1992, pp. 67 - 74.
6. *ISDN-Kit launches NeXT into communications future*, **NEXTWORLD**, Spring 1992, pp. 18.
7. *Next Inc. Is Enjoying Comeback, But Competitors Lurk in Wings*, **Wall Street Journal**, June 27, 1991, pp. B1, B4.