New York, NY
347-891-2826 | http://ionicsolutions.net
bmoretz@ionicsolutions.net

BRANDON MORETZ

OBJECTIVE

Master of Science in Data Science and Bachelor of Science in Computer Science, analytically minded individual with more than fifteen years solving business problems with various programming skillsets, as well as enterprise level application development experience.

Strong design, problem-solving and analytical skill sets.

Expert knowledge in various data platforms with extensive experience with T-SQL, R & Python (both stand-alone and in-database), SSIS, SSRS, and SSAS.

Expert knowledge of the Windows Platform SDK, .NET Framework, Windows Presentation Foundation, Universal Windows Platform and related key components leveraging both managed Code (C#) and native (C++).

Extensively experienced in developing solution architecture, performing related technological research as well as third-party component evaluation. Demonstrated success developing and deploying production solutions in C++, C#, R, Python and T-SQL.

I am looking to realize designs into production-ready applications through a direct approach.

EDUCATION

M.S. DATA SCIENCE – NORTHWESTERN UNIVERSITY, EVANSTON, IL

Jan 2018 – Dec 2019

- Strong emphasis on both supervised and unsupervised statistical learning techniques though applied applications.
- Analytics and modeling specialization emphasizing applied statistics.
- Data engineering (algorithm design) and financial risk / analytics as electives.

B.S. COMPUTER SCIENCE – WESTERN CAROLINA UNIVERSITY, CULLOWHEE, NC

Aug 2004 – Dec 2006

- Database design and implementation. Focused on database concepts such as entity-relationship model, relational algebra, structured query language, buffer cache management, stored structures, tree, hash-based indexing.
- Capstone project consisted of a 3D rendering platform (C++/DirectX) to visualize bioinformatic data collected as part of my professors' dissertation.

PROJECTS & INTERESTS

Computational Finance – Personal side project to work through various computational finance books and self-study.
Technology stack: C++ 17, STL, googletest, boost, UWP

MS - Data Science – Portfolio of selected course work performed during my Master's in Data Science at Northwestern.

SKILLS

Languages: C#, C++, R, Python, Mathematica, T-SQL

Platforms: .NET, STL, Win32 SDK, UWP, WPF, SQL Server, Anaconda

Modeling: GLM, GAM, Lasso, Ridge, SVM, NN, RF, PCA, FA

EXPERIENCE

MSD CAPITAL, L.P. NEW YORK, NY — *February 2013 – Present*

HEAD OF DEVELOPMENT — *January 2017 – Present*
TECHNICAL LEAD — *March 2015 – December 2016*
SENIOR DEVELOPER — *February 2013 – February 2015*

At MSD Capital, L.P. my role as Head of Development, reporting directly to the Chief Operating Officer, poses interesting projects from a technical as well as business analysis perspective.

Analytics Platform

- Lead development effort on our in-house proprietary data analytics and risk system on a team of five.
- Presentation layer constructed with WPF/C#, Service-Oriented-Architecture built with WCF/C#, data layer modeled in T-SQL and processed with R packages deployed to the server instance, invoked directly with stored procedures.
- Built a suite of FX hedging and settlement tools to automate our FX process. Constructed the core FX Hedging model in R, which used various metrics of hedging (FMV, Cost, MTM, Fixed, Underlying, Custom Model, etc.) to calculate the target hedge by strategy then aggregate by total currency exposure across the firm.
- Build multiple factor-based models in R leveraging Bloomberg data for the India market working directly with the portfolio manager through various iterations.
- Build various stock screeners through working with analyst and portfolio managers to devise models that were prototypes in Excel and later operationalized in R.
- Built a real-time Profit-Loss system by integrating data from our core accounting / OMS systems, then enriching the data sets with market data using our proprietary Market Data service build in WCF using RX/C#.
- Implemented a new third-party data warehouse vendor to supplant our prior vendor who was not fulfilling expectations from the business. Methodically and strategically removed and replaced it piece-by-piece while keeping the operational aspects of the business running smoothly.

Option Pricing Framework

Working directly with the lead quantitative analyst and head of trading, I gathered requirements, reverse engineered existing production spreadsheets and built a specification on how to enterprise the spreadsheet functionality into a real-time Windows application.

- Developed a custom in-house option-pricing framework that involved leveraging QuantLib (an open source C++ financial library) for the derivative pricing engine and adding functionality that generated a variance/underlying "shock matrix" for a given option.
- Developed a WPF application style with a custom configurable n x m matrix data layout (for the pricing matrix), along with custom data overlays in each cell when pricing a strategy.
- Developed a reusable Bloomberg Data Module for the SAPI API that was responsible for pulling option-pricing parameters (underlying, strike, volatility, maturity date, risk-free rate and dividend yield) in real-time.

Research Capture System

Working with the Research Analyst, I developed a non-intrusive proprietary research capture system that leveraged the Windows Property Store metadata framework for storing and search custom metadata (Company, Author, Model, Write-up, Earnings Call, etc.).

- Wrote a custom Windows Property Handler in C++ and accompanying encapsulation wrapper of the functionality to get/set the metadata values in CLI/C++, such that it was accessible from our managed code (WCF Services).
- Developed an "Auto Tagging" that upon auto-detection new/edited content (RX event pattering with FSW), automatically associates the file with the appropriate metadata based on a robust set of statistical heuristics.

SOFTWARE CONSULTANT – TRUISION, INC.

Jan 2012 → Feb 2013

At Promontory Financial Group, my role was to architect and lead development effort for a custom thick-client workflow management system designed to audit a Fortune 10 client.

Key Tasks:

- Managed client deliverables with an average development life cycle of 2.5 weeks throughout the project.
- Designed core application architecture with a standard 3-Tier approach.

Implementation Details:

- System concurrently supported 1,600+ users, with 2,000+ users in the system with an average transaction count of 1.1 million per day.
- The resulting data set was used as the statistical basis for the actual financial settlement from the client to the mortgage borrowers upon completion of the project.

WEB ARCHITECT – RR DONNELLEY (NASDAQ:RRD), CHARLOTTE, NC

Mar 2006 → Jan 2012

Financial Publishing Engine:

I lead the development team responsible for integrating an existing platform the company acquired and migrating their clients onto our flagship platform.

- Wrote a comprehensive functional requirement for an "Expression Syntax" that was the foundation of our integration platform.
- Developed an LL parser engine and supporting libraries in C# to transform data into a consistent model for the on-site SMEs.

RightContent

In support of migrating our flagship product away from the Microsoft SharePoint stack, I researched replacements for the Office Integration functionality due it being a core demand from the Business.

- Developed a SAPI Extension in C# that provided a direct layer of communication via a custom WebDAV module that runs directly in IIS, above the ASP.NET layer, to facilitate communication between the client database and the end users' desktop.

The module supports both traditional WebDAV requests through custom HTTP verbs, as well as the FPSE model of GET/POST requests.