

Jake Drew Ph.D.

www.jakemdrew.com

jakemdrew@gmail.com

Career Excellence

- Ph.D. in Computer Science, Adjunct Professor - Master's Level Data Mining for DataScience@SMU
- 15 years Fortune 100 Analytics and Revenue Optimization experience in the Financial Services industry
- Expert Witness, Assistant , and Technical Consultant in 24 patent infringement and IP related cases.
- Featured as a Banking and Revenue Optimization expert for Nightline, USA Today, and ABC News
- Interviewed for the Senate Banking and Finance Committee Overdraft Protection Act hearing 10/2009

Patent Applications

- US Provisional Patent 62/333,159 "Document Based Query and Information Retrieval Systems and Methods"
- US Patent Application 61/825,486 "System and Method for Machine Learning and Classifying Data"
- US Patent Application 14/169,689 "Collaborative Analytics Classification Learning Systems and Methods"
- US Provisional Patent 61/647,608 "Single Pass Hierarchical Agglomerative Clustering Systems and Methods"
- US Provisional Patent 61/781,356 "Collaborative Analytics Classification Learning Systems and Methods"
- US Provisional Patent 61/761,523 "Collaborative Analytics Classification Learning Systems and Methods"
- US Provisional Patent 61/647,608 "Universal Language Classification Devices, Systems, and Methods"

Honors and Awards

- Presenter, Workshop on Bio-Inspired Security, Trust, and Resilience (BioStar 2016), May 2016
- Presenter, Performance & Capacity 2014 by CMG, November 2014
- Presenter, The 5th ACM Conference on Bioinformatics (ACM BCB), September 2014
- Presenter, IEEE International Workshop on Cyber Crime, May 2014
- Scholarship Recipient and Presenter, SIAM Data Mining Conference Doctoral Forum, April 2014
- 1st Place, The IBM Great Mind Challenge: Watson Technical Edition, Spring 2014
- 1st Place, SMU Research Fair, Computer Science, February 2013, 2014, 2015
- Summa Cum Laude and 4.0 Cumulative GPA, The University of Texas at Tyler, December 2011
- 4.0 Cumulative GPA, The University of Texas at Tyler, December 2011
- Student of the Year, The University of Texas at Tyler, Engineering and Computer Science, April 2011
- Presenter, Alpha Chi National Convention, April 2011

"Based on my 10 years experience working with him, I can unreservedly recommend Jake Drew for any Senior Technology position."

Dominic Giannangeli
Director, Pricing and Revenue
JPMorgan Chase

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Education

Southern Methodist University | Dallas, TX

January 2014 | January 2016 | Computer Science

- Doctor of Philosophy in Computer Science
- 4.0 Cumulative GPA
- Research Assistant, Tyler Moore, Cybercrime Economics
- Research Assistant, Michael Hahsler, Machine Learning and Bioinformatics
- Best Research Computer Science, 2014 and 2015, SMU Research Fair

Southern Methodist University | Dallas, TX

August 2012 | December 2013 | Computer Science

- Master of Science in Computer Science
- 3.82 Cumulative GPA
- Research Assistant - Cybercrime Economics, Machine Learning, and Bioinformatics
- STRAND Gene Sequence Classifier Inventor: strand.jakemdrew.com
- Best Research Computer Science, 2013 SMU Research Fair

The University of Texas at Tyler | Tyler, TX

August 2009 | December 2011 | Computer Information Systems

- Bachelors of Science in Computer Information Systems
- 4.0 Cumulative GPA, Summa Cum Laude, Alpha Chi Honor Society
- 2011 Student of the Year, College of Engineering and Computer Science
- UT Cheerleader Captain 2009 – 2011
- 2010 Homecoming King Nominee



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Experience

Patent Infringement and IP Case Consultant | Dallas, TX

August 2013 | Present

- Expert Assistant, Witness, and Technical Consultant in 24 patent infringement cases.
- Rebuttal report preparation, claims review, and infringement analysis
- Deposition and hearing experience
- Case history and references available upon request

Southern Methodist University | Dallas, TX

May 2016 | Present | Adjunct Professor | DataScience@SMU Program

- Instructor for MSDS 7331 Data Mining Course
- Live online instructor using 2U's 2DS system and Adobe Connect
- Topics: Data mining, Classification, Regression, Clustering, Recommender Systems, Association Rule Mining
- Tools: Jupyter, IPython Notebook, Scikit-Learn, R, Anaconda, Conda R-essentials, Pandas, Numpy

Southern Methodist University | Dallas, TX

January 2016 | Present | Postdoctoral Fellow | Darwin Deason Institute for Cyber Security

- Manage cybersecurity research projects for major US financial, healthcare, and security companies
- Perform research on bio-inspired machine learning algorithms for applications in cyber security
- Identify and detect enterprise-wide internal threats using case control and machine learning methods
- Utilize NIST framework to develop current and target and security profiles for fortune 500 clients
- Draft grant proposals for NSF and other funded research opportunities

Southern Methodist University | Dallas, TX

August 2012 | January 2016 | Research Assistant and Lab Instructor

- Understanding and Disrupting the Economics of Cybercrime, Department of Homeland Security Grant, BAA 11-02, Research Assistant to Tyler Moore
- Bioinformatics and Multicore Machine Learning, Research Assistant to Michael Hahsler
- High Assurance Computing and Network Labs Team Member
- Lab Instructor for Java and C++

PersonalWeb Technologies | Tyler, TX

January 2011 | April 2012 | Data Architect

- Universal Language Classification System inventor
- Machine learning and artificial intelligence architecture
- C# natural language processing, sentence detection, and noun phrase extraction
- Website and document semantic classification process architect
- MySQL / MariaDB Database Administrator



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Bank of America & MBNA | Dallas, TX | Newark, DE | Brunswick, ME
September 1994 | March 2009 | Card Services | Vice President

January 2000 | March 2009 | Revenue Optimization and Senior Change Consultant

- Responsible for the development and implementation of bank revenue initiatives in excess of 500 MM annually.
- Information Management Business Project Leader for the largest revenue and technology project ever completed at Bank of America representing over 2 years and 1 million hours of development work.
- Personally generated over 6 MM in revenue ideas each year.
- Worked with and managed the efforts of McKinsey, Accenture, IBM, EDS, and Perot Systems consultants on various technology projects including query conversions, disaster recovery, mirror image data center transaction processing, multi-million dollar mainframe software contract negotiations, time to market studies, automated test data extractions, and end to end testing process automation.
- Bank wide data warehouse and production system data subject matter expert.
- Managed the design and implementation of a new business intelligence platform for over 1,000 Card Services data analysts.
- Lead the successful conversion of over 7,000 reporting scripts, queries, and programs to SAS.
- Developed a customized SAS education strategy and coordinated the onsite education of over 400 data analytics power-users.
- Instructed multiple SAS education sessions for various Bank of America specific data mining topics.
- Interim SAS Management Console architect and administrator during the bank-wide rollout of SAS Enterprise Guide.
- Created multiple Visual Basic solutions to perform various automated mainframe transactions.
- Utilized the SAS Integrated Object Model to develop mainframe and Unix SAS processes within MS Office.
- Developed TCP and Spawner connectivity between desktop, mainframe, and Unix SAS platforms.
- Responsible for recommendation and bank-wide implementation of the IBM Sub Capacity Mainframe Software Billing Plan.
- Five time MXG code shark and industry recognized sub capacity billing SMF data expert.

Management Internship Program Participant | 1999 | Newark, DE

- Rotated through all major customer contact and business development departments.
- Worked on numerous area specific consulting projects and presented findings to executive management.
- Participated in weekly mentoring relationships with Senior Executive Operating Committee members.
- Gained high exposure to and interaction with numerous senior executives.

Business Technology Support Project Manager | 1998 | Newark, DE

- Managed technical projects for the Consumer Finance Division.
- Wrote business requirements for auto-approval, auto-verification and multiple application detection projects.
- Designed automated MS Access Databases for various areas throughout the bank.
- Gained experience with MBNA System Development Methodologies.



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Senior Operations Support Analyst | 1997 | Brunswick, ME

- Site reporting manager Brunswick, ME.
- Designed MS Excel / Visual Basic programs to automate reporting processes.
- Drafted business requirements plan to provide reporting automation to the New England Region.
- Implemented balance transfer tracking database supporting over 100 concurrent users in less than 2 weeks.
- Created automated reporting system for the Dallas Activation Taskforce. (One month project in Dallas, TX)
- Achieved Master Artist status and charged with implementing process improvement ideas.

Senior Floor Coach Brunswick | 1997 | Brunswick, ME

- Managed the efforts of 25 balance maximization representatives.
- Responsible for ensuring a maximum level of sales performance from each representative.
- Team achieved over 100% of performance goals every month coaching.

Credit Acquisition Credit Analyst | 1996 | Newark, DE

- Analyze and develop credit card applications with a lending authority of \$5,500 dollars.
- Maintained a lending portfolio of 22 million dollars with a delinquency level of less than 3%.

Telemarketing and Customer Assistance Account Manager | 1994-1995 | Dallas, TX

- Worked with past due accounts and marketed various credit card products to potential customers.

Skills

Programming Languages

- R, Python, SAS, Jupyter, Scikit-Learn
- C#, .NET, ASP.NET, MVC
- HTML5, IndexedDb, jQuery, mb.jQuery, jQuery DataTables
- JavaScript, Java, C++, Python
- VB.NET , Visual Basic for Applications

Data Analytics

- Machine learning and classification using SVM, ADA, GLM, Boosting, Bagging, Stacking, and many others
- Parallel natural language processing and high performance data analytics using C#
- MapReduce processing and OpenNLP Natural Language Processing using C#
- Clustering, Association Rules, and Classification using R and Python
- MySQL Stored Procedures, MySQL Workbench, MySQL/MariaDB Installation and Administration
- SQL Server Management Studio, T-SQL Stored Procedures, Complex SQL Analytics
- Base SAS, SAS Macro, Data Step, Proc SQL, SAS DB2 z/OS & Unix, Enterprise Guide, Cobol2SAS
- MXG SAS, 5 time MXG Code Shark
- DB2 SQL, QMF, and FOCUS on z/OS
- MS Access, VBA 6.0 automation, Access Web Databases, Access Web Interfaces



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Technical Certificates

SAS

- SAS Introduction
- SAS Using SAS
- SAS Data Manipulation
- SAS Data Step Programming

SAS Institute Training | Cary, NC

- Smart Growth: High Performance and Sustainability Through Analytics
- Premier Business Leadership Series, Las Vegas, NV
- Conjoint Analysis: Evaluating Customer Preferences
- Accessing Data / SAS Intelligence Platform
- Creating and Customizing Reports Using SAS Enterprise Guide
- Querying Data Using SAS Enterprise Guide
- Programming I Essentials
- Programming II Essentials
- SQL Processing with SAS

BrainBench

- RDBMS Concepts
- SQL (ANSI)
- MS Access 2000 Programming, MS Access 2000 Fundamentals
- Data Warehousing Concepts
- Data Modeling Concepts
- Customer Requirements Analysis

MindLeaders

- Database Maintenance
- Data Warehousing Concepts
- VB6 Programming Basics
- VB6 Lists and More Controls
- VB6 Coding the Details
- VB6 Controls and Coding
- SQL (Advanced Query Techniques)
- Database Concepts
- DB2 The Programming Environment

Learning Tree

- Microsoft SQL Server 7 Comprehensive Intro: Hands On, 3 Credit Hours



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MCSO Certification Training | Ameritrain | Wayne, PA

- Visual Basic Desktop
- Visual Basic Distributed
- Microsoft SQL Server 7.0
- Defining and Developing Business Requirements
- One of only 20,000 people worldwide to have completed Microsoft Certified Solution Developer training by July 1999.

Publications

- J. Drew, T. Moore, M. Hahsler, Polymorphic Malware Detection Using Sequence Classification Methods, Workshop on Bio-Inspired Security, Trust, and Resilience (BioStar 2016), February 24, 2016
- J. Drew, Scalable Machine Learning using Applications in Bioinformatics and Cybercrime, (DISSERTATION) ProQuest Dissertation Publishing, November 20, 2015
- J. Drew, T. Moore, M. Vasek, Mass Compromise of IIS Shared Web Hosting for Blackhat SEO: A Case Study
- J. Drew, T. Moore, and J. Wadleigh, The E-Commerce Market for “Lemons”: Identification and Analysis of Websites Selling Counterfeit Goods, International World Wide Web Conference, May 18, 2015
- J. Drew and T. Moore, Optimized Combined Clustering Methods for Finding Replicated Criminal Websites, EURASIP Journal on Information Security 2014, September 9, 2014
- J. Drew and M. Hahsler, Practical Applications of Locality Sensitive Hashing for Unstructured Data, Performance & Capacity 2014 by CMG, November 06, 2014
- J. Drew and M. Hahsler, Strand: Fast Sequence Comparison using MapReduce and Locality Sensitive Hashing, The 5th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB), September 22, 2014
- J. Drew and T. Moore, Automatic Identification of Replicated Criminal Websites Using Consensus Clustering Methods, IEEE International Workshop on Cyber Crime (IWCC 2014), May 08, 2014
- J. Drew and M. Hahsler, Strand: Variable Length K-mer Sequence Comparison Using Map Reduce and Locality Sensitive Hashing, SIAM Conference on Data Mining (SDM 2014) Doctoral Forum, 04/26/2014
- J. Drew, Utilizing Emerging Technologies to Optimize Cattle Grazing Management, Alpha Chi National Convention, April 02, 2011



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Articles

www.codeproject.com | www.datasciencecentral.com | blog.jakemdrew.com

- Finding Whales in Ocean Water: Edge Detection, Blob Processing, and RGB Channels in C#, 01/12/2016
- Mining Webpages in Parallel 03/19/2015
- Mass Compromise of IIS Shared Web Hosting for Blackhat SEO: A Case Study, 03/10/2015
- Building The Ultimate Multipurpose Gaming Workstation Server 01/17/2015
- Practical Applications of Locality Sensitive Hashing for Unstructured Data, 05/09/2014
- Clustering Similar Images Using MapReduce Style Feature Extraction with C# and R, 07/03/2014
- Machine Learning in Parallel with Support Vector Machines, Generalized Linear Models, and Adaptive Boosting , 03/10/2014
- Parallel Programming in C# and Other Alternatives, 12/24/2013
- Image Thinning Using R, 04/29/2013
- Creating N-Grams Using C#, 04/23/2013
- MapReduce / Map Reduction Strategies Using C#, 01/08/2013
- Automating the HTML5 Manifest, 08/10/2012
- A New Javascript Wrapper Library for HTML5's IndexedDb, 08/10/2012

Web Properties and Plugins

- www.jakemdrew.com
- strand.jakemdrew.com
- www.grass.ag
- FooTable.Editable on GitHub: github.com/jakemdrew/FooTable.Editable
- IndexedDbEz on GitHub: github.com/jakemdrew/ixDbEz

