Brent Schneeman

ENGINEERING AND DATA SCIENCE

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Overview

Data science executive building and deploying machine learning and algorithmic models in real-time customer facing applications. Seeking IC or management role influential in operationalizing machine learning in production services.

I have broad leadership experience across data scientists, software engineers, data analysts, and data engineers, having scaled-from-zero durable teams across disciplines and companies. My software engineering and leadership skills greatly facilitated my re-focus on data science and machine learning as writing code enabled rapid learning and hypothesis testing. I am adept at combining engineering and science to help companies unlock the value of their data as they pivot to modern algorithmic-based business models. I have overseen and architected data solutions to provide APIs and platforms which expose ML and AI to stakeholders.

I am active in local meetups and conferences, presenting on a variety of Data Science and Machine Learning topics, as well as being an Advisory Board Member for UT-Austin, McCombs School of Business Masters of Science Business Analytics program since 2015.

Expertise

TECHNICAL

Big Data and Streaming	Spark, Kafka, ElasticSearch
Datasets	JSON, Schematic, CSV, Schema Design,
Deep Learning	CNN, RNN, LSTM, Active Learning, Transfer Learning
DevOps	Kubernetes, AWS, Kubeflow
Languages	Python, R, SQL, Java
Machine Learning	Tensorflow, Keras, Pandas, Tidyverse
Supervised Learning	Regression, Random Forest, Gradient Boosted Trees
Unsupervised Learning	K-means and hierarchical clustering, PCA, tSNE
Version Control	Git, DVC

ORGANIZATIONAL

Collaboration	Strategic thinking, Engineering and Science leadership, C-Level advisor, Team design
Miscellaneous	Operationalizing algorithms, product orientation
Project Management	Agile, Scrum, Kanban

Experience

Alegion, Inc

SENIOR DIRECTOR, MACHINE LEARNING   *March 2019 -*

- Delivered AWS Sagemaker and Faster R-CNN-based solution for object classification and detection for customer-specific video and image use cases. ML improved throughput by 30% over the fully-manual process, and uses AWS Lambda functions and SQS messaging
- Lead efforts for cross-frame entity resolution of objects in videos. Current heuristic approach determined 'good enough' relative to ML/AI approaches. Team deployed to higher ROI efforts
- Delivered Kubeflow, Kubernetes, Weights and Biases-based metrics, and DVC-based ML infrastructure, focusing on computer vision and natural language processing capabilities. This provides alternatives to the Sagemaker efforts, and gives greater model composition, reproducibility and data tracking. Target use cases for computer vision and NLP
- Personally built, trained and deployed color-classification CNN-based model for retail fashion catalog. Leveraged aforementioned ML infrastructure. Model allows Alegion to by-pass Crowd for certain color classes, greatly increasing margin
- Architected and lead delivery of Active Learning workflow coupling machine learning with human annotators, which provides significant workflow efficiency, chiefly for image annotation tasks. System deployed on Kubernetes-based infrastructure hosted on Amazon Web Services (AWS)
- Identified new product opportunities and developed new SKUs for efficient sales penetration, based on real-world machine learning engineering processes and rapid hypothesis testing
- Collaborate with VP Sales and CEO to provide high-touch contract negotiations with key customers. Provide superlative support for Sales in front of these customers
- Manage machine learning engineering and architecture team responsible for creating human-in-the-loop machine learning capabilities into the core product
- Assumed roles of engineering leader, scrummaster, product owner, and team member as appropriate; skilled at blending Machine Learning and Software Engineering process techniques to deliver ML-based solutions
- Implemented and directed Alegion's intellectual property program by liaising between outside Counsel, internal inventors, and executive sponsors
- Active in local meetups, spoke at Data Day Texas in January 2020
- Reporting to Vice President, Engineering; dotted line to CTO

DOSH, LLC

SENIOR DIRECTOR, DATA SCIENCE   *Jan 2018 - Feb 2019*

- Built a 9-person diverse team of Data Scientists, Data Analysts, and Data Engineers, all focused on evolving Dosh to a more data- and algorithmic-oriented mobile-app company. The Data and Analytics team was responsible for Data Science, Business Intelligence and Data Engineering (e.g. building the data warehouse and data lake)
- Advised C-level business partners to generate marketing campaigns, financial models, sales models, and investor-deck content
- Collaborated with technical stakeholders to create a data warehouse from Node.js-based application data and to create ETL pipelines feeding location data to AWS S3 buckets for graph analysis. Eliminated redundant RDBMS systems in-favor of AWS Redshift via ETL system build on top of Matillion
- Built XGBoost-based models predicting offer redemption (transactions) and deeply analyzed fraudulent behaviors and referral networks using R and various network analytics packages
- Lead transformation of company dashboards from 'vanity-metrics' to business-focused KPIs
- Directed Data Science efforts in predicting causal impact of multi-vendor markets and price elasticity
- Reported to Sr Vice President, Engineering

HomeAway, an Expedia Company

SENIOR DIRECTOR, DATA SCIENCE   *Jul 2014 - Dec 2017*

- Manage, Bootstrap, and Provide Strategic Vision for data science initiatives, such as Inventory Ranking and Optimization, Content Recommendations, Marketplace Health, Image Quality, Chatbot AI Services, and other business critical efforts
- Strengthened Algorithmic and Machine Learning muscle through project-based leadership. Partnering with disparate product lines to answer questions quicker, and find new questions faster. Evangelized data-informed decision making across company and with key executives, leading to the formation of the HomeAway Data Science Team. Built and directed 25 person team consisting of PhD Data Scientists and Machine Learning Engineers
- Team projects included competitive intelligence, fraud detection, bot detection, unstructured and semi-structured data mining, search result ranking, photo analysis, and price and occupancy predictions
- Partnered with the UT McCombs School of Business, providing hiring-manager guidance and data for the Masters of Science Business Analytics program. Hired 3 graduates from the program
- Individual contributor on ML modeling for consumer facing chatbot. Duties included labeling data, building LSTM-based intent classifier (in Keras), collaborating with data and software engineering to determine application architecture
- Created experience-based recommendation service that found activities in one location that are similar to activities in another. A word2vec-based latent embedding space was used to find the similar activities
- Created photo-similarity service that allowed clients to explore images of properties that are similar to another properties photos. An 'image2vec' vector space was built from images and the service navigated that space
- Created Machine Learning pipeline in collaboration with infrastructure team within HomeAway to aid model production and deployment
- Created Data Science Internship Program for HomeAway University
- Using R and later Spark, created models that compared geographic representation of HomeAway properties with the representation from a competitor. Initially, TF-IDF vectors were built from property descriptions and distances measured between those vectors determined duplicate or unique properties, but LDA distributions were used as the project matured. A similar transition from R to Spark occurred as the need for greater parallelization became apparent
- Bayesian and frequentist multi-variate test analysis in R
- Introduced natural language processing, machine learning, and defensible statistical inference
- Multiple team and individual presentations on ML efforts and affects to C-level audiences
- Created and lead 100+ volunteer "science club", all trying to swipe right for science
- Acted as an external ambassador through public speaking at various events. Built internal credibility around a scientific method to AB Testing and algorithmic approached to business problems
- Collaborated with Data and Software Engineering organizations to prototype and select big-data solutions based on Hadoop (HDFS, Hive) and Spark
- Leadership role in Introduction to Data Science courses, Mentorship Program, HADES
- Reported to CIO

HomeAway, an Expedia Company

DIRECTOR, SOFTWARE ENGINEERING   *Jun 2010 - Jul 2014*

- Directed 25-person team responsible for the Orders and Payments Platform services. The team consisted of Engineers and Architects of all levels and areas in "the stack" (UX/UI, web-tier, service layer, ...)
- Worked closely with CFO, CTO, and CPO as the services handled much of HomeAway's revenue
- Lead development and enhancement of PCI Compliant "payment island". Architected and implemented payment gateway router which sends transactions from clients to any one of several payment gateways (e.g. Cybersource, Payflow Pro, Yapstone, and Trident)
- Established HomeAway Inventions Program, which is responsible for identifying, cataloging and protecting intellectual property. Sole- or Co-Inventor on several pre-patent inventions
- Technical member of global payment processor negotiation team, responsible for technical evaluation and diligence for HomeAway's successful selection of a global payment processor
- Team Lead delivering Unified Payments Services, PCI and SOX compliance, and migrating vertical payment flows to common service-based API
- Two patents on data storage were filed and approved (see details in Patents section)

PayPal, Inc

PRINCIPAL SOFTWARE ENGINEER   *Mar 2007 - Jun 2010*

- Implemented two-factor authentication system (via hardware token) for PayPal and eBay
- Formed small team to introduce Agile Software Development methodologies to PayPal, received executive support and developed training material
- (Certified) Scrummaster for next-gen (now current gen) view-layer technology

PayPal, Inc

ENGINEERING MANAGER, SOFTWARE DEVELOPMENT   *Mar 2008 - Jul 2009*

- Lead development of the content management system for PayPal's marketing department

Visa, Inc

SOFTWARE ENGINEER   *Nov 2000 - Mar 2007*

- Managed Corporate Card Expense Reporting service for large, multi-national financial institutions
- Implemented central directory server for Verified by Visa
- Developed reference standard Directory Server for Verified by Visa(tm) implementation of the Three D Secure payment protocol
- Lead testing and qualification efforts for Verified by Visa(tm) certifications

Globeset, Inc

SOFTWARE ENGINEER   *Feb 1998 - Nov 2000*

- Introduced Java to the development process. Wrote monitor applications to ensure highly-available services

Education

The Santa Fe Institute

Complex Systems Summer School   *2015*

University of Southern California

BSc - Electrical Engineering   *1990*

Carroll College

BA - Mathematics   *1990*

Volunteering

City of Austin Business & International Affairs Focus Group

Industry Consultant   *Jan 2018 -*

- Focusing on Austin TX's outreach to both business and international affairs

Skillpoint Alliance

Chairman of the Board, Board Member   *Feb 2012 - Sep 2016*

- Skillpoint Alliance builds partnerships between industry, education, and the community to provide a more qualified workforce for Central Texas

UT McCombs School of Business, Masters of Science, Business Analytics

Industry Adviser   *May 2015 -*

- Advising McCombs on Industry needs for Data Science related curricula

Certifications

Nov 2017   Neural Networks and Deep Learning (Python / Keras)   *Coursera*

Sept 2014   R Programming   *Coursera*

Sept 2014   The Data Scientists Toolbox   *Coursera*

June 2008   Certified Scrummaster   *Rally, Inc.*

Patents

USPTO

US9928498B2 System, apparatus and method for segregating data in transactions via dedicated interface

elements for isolated logic and repositories   *2018-03-27*

USPTO

US10339487B2 Systems and methods to reconcile free-text with structured data   *2019-07-02*