BRANDON O'BRIANT

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PROFILE

Data scientist with a strong machine learning and predictive analytics background, 3+ years of experience in **SQL**, **R**, **Python**, and logical data modeling, and solid skills in programming and strategic planning. Passionate about statistics, mathematics, risk modeling, computational science and modeling, and explaining data science to non-technical business audiences. He has developed solid skills to provide reports, analyze data, manage records, and coordinate with a variety of teams. Committed to the highest quality and research accuracy, he builds productive relationships with all stakeholders and organizes timelines and methodologies to achieve common goals.

TECHNICAL SKILLS

Machine Learning: classification, regression, clustering, feature engineering

Statistical Methods: time series, regression models, generalized linear models, principal component analysis and dimensionality reduction, Markov models, metaheuristic algorithms, linear optimization, multi-objective goal programming, non-linear optimization, stochastic optimization, exploratory data analysis (numerical and visual), predictive modeling, prescriptive analytics, descriptive analytics

Software, Programming Languages, Technologies: Python (Tensorflow, SciKit-Learn, NLTK, Seaborn, Matplotlib, Numpy, Scipy, Pandas, Gurobi), C++, CUDA, R, SQL, HTML, CSS, GitHub, Linux, LaTeX

Selected Coursework: Practical Machine Learning (Python), Regression and Multivariate Analysis (Python), Statistical Analysis (R), Database System and Data Preparation (Python, PostgreSQL), Computational Science Modeling and Simulation (Python), Mathematics of Risk, Decision Analytics (Python, Gurobi, Excel ASPE), Probability/Statistical Theory, Business Finance, Linear Algebra (Theory/Applied), Data and Error Analysis, Databases and Web Development (Java, HTML, CSS, MySQL), Differential Equations, Project Management

EDUCATION

Northwestern University, Evanston, IL   March 2017 - August 2018
Master of Science in Data Science, GPA 3.74   (Online)

Pacific Lutheran University, Tacoma, WA   September 2014 - December 2016
Bachelor of Science in Mathematics, 3.09

Pierce College Ft. Steilacoom, Lakewood, WA   September 2012 – August 2014
Associates of Arts Mathematics Focus

ACADEMIC HONORS AND AWARDS

Natural Science Outstanding Student for Mathematics   2013-2014
Pierce College Ft. Steilacoom, Lakewood, WA

DATA SCIENCE PROJECTS

Spring 2017-Present

- Developing Master's Thesis in applications of fuzzy **GIS** based **catastrophe models** and **stochastic** optimization for natural catastrophe risk management and modeling. Programming languages to be utilized: Python (Pandas, Numpy, Matplotlib, Gurobi, SciKit-Learn, Tensorflow, Os, Seaborn), ArcGIS, C++, CUDA

- Created an enterprise **GIS** with **Postgres SQL**, **QGIS**, and **PostGIS** to manage users, and support multiple GIS software clients.

- Pulled securities data from Yahoo Finance for Apple Inc. (AAPL), Microsoft (MSFT), Intel (INTL), and Tesla Inc. (TSLA). Performed 1000 different weight combinations to produce a Markowitz optimized portfolio and visualized the Markowitz Efficient Frontier. Then the Sharpe Ratio was constructed to identify two portfolios on the efficient frontier. One with the minimum risk with highest return and the other highest return with acceptable risk. Python (Pandas, Numpy, Matplotlib)

- Compared classification methods, logistic regression, Naive Bayes, and support vector machine using a cross-validation design. The average AUROC was used to assess the performance of the model's ability to predict customers that will participate in term deposits. Generated a managerial report and recommendation form the analysis. Python (SciKit-Learn, Pandas, Numpy, Matplotlib)

- Created a 10-KFold cross-validation design, using root mean-squared error (RMSE), to compare regression methods (linear, ridge, lasso, and elastic net) for assessing the market value of residential real estate. Generated a managerial report and recommendation form the analysis. Python (SciKit-Learn, Pandas, Numpy, Matplotlib, Os, and Seaborn)

- Conducted exploratory data analysis of software preferences for course offerings in the new data science program design at Northwestern University. Generated a managerial report and recommendation form the analysis. Python courses were most preferred at 31.11%. Python (Pandas, Numpy, Matplotlib, and Seaborn)

- Developed and tested neural networks, within a benchmark experiment, for classification of handwritten characters from the MNIST data set, consisting of 70,000 observations. Generated a managerial report and recommendation form the analysis. Python (SciKit-Learn)

- Used PCA to generate principal components representing 95% of the variability in 784 explanatory variables. Random forest classifiers were constructed with and without principal components to classify handwritten digits. Performance of the models were assessed using an F1-score. Generated a managerial report and recommendation form the analysis. Python (SciKit-Learn)

- PostgreSQL and Python were used generate sales reports based on previous month's sales transactions.

- To assist business analyst working on a model for customer lifetime value analysis, PostgreSQL and Python were used to extract the relevant data and presented to the analyst with comma delimited .txt file for use.

- Used R to perform exploratory data analysis methods to identify characteristic differences between abalone classes. Performed variance and linear regression analysis to construct and evaluate binary decision rules for practical harvesting level of abalones. Culminated in a thorough analysis and recommendation report.

PERSONAL WEB PORTFOLIO
- HTML, CSS, and JavaScript were used to build personal web portfolio that is hosted through GitHub-Git Pages.

PACIFIC LUTHERAN UNIVERSITY, SENIOR CAPSTONE 2016
- Fuzzy Set Theory--Application in Forecasting: Researched Fuzzy Logic/Set theory and formulated a detailed comparative analysis to 'crisp' logic in applications of stock market volatility forecasting using fuzzy c-means clustering algorithm and neural network with backpropagation. (Python, R, and Excel)

PROFESSIONAL EXPERIENCE

DATA SCIENCE CONSULTANT   December 2017 – February 2018
Tuxpan, Mexico

Working with the General Manger of Grupo Industrial Tebvlar to develop a specialized data science division for an enterprise resource planning platform currently in development under a new startup Caisoft.

- Participated in an informational meeting with General Manager of Teblvar and the Ph.D. advisement board to work out the details of the project, gauge the current skill sets of the associated team members, which includes computer science Post-docs, Ph.D. candidates, master's candidates, and undergraduates.
- Procuring and establishing data science and analytics development plans for data science analytics team.
- Conducting research for the development of an analytics and AI platform for directing fish harvesting vessels.

GAME PROGRAMMER   June 2015 – September 2015
Sleepydog Studios
Lakewood, WA
Using C++, Unreal 8, and creative problem solving conducted the following duties:

- Develop real physics systems for weapons and environment collisions.
- Assisted the art department by developing and connecting character models to control systems.

PREVIOUS EXPERIENCE

LIBRARY ASSISTANT   October 2012 – January 2013
Pierce College at Fort Steilacoom
Lakewood, WA
This Work Study position entailed fielding technical issues and questions pertaining to computer hardware/software for the library patrons. Other duties included:

- Restocked shelves with the books in their proper place.
- Cleaned and maintained computers in the library.
- Assisted patrons with locating books/information or referred them to a librarian who specialized in their questions.
- Created a positive and approachable environment.

RIGGER/DIVER/ASSISTANT LIFE SUPPORT TECHNICIAN   January 2011 – June 2012
Global Industries Ltd.
Carlyss, LA

- Ensured test-result validity before recording results, earning a reputation for meticulous attention to detail.
- Completed routine assignments and surface and saturation diving system set-up in a timely manner.
- Established efficient communication with divers, Senior Life Support Technician, and diving Supervisors to contribute actively to exemplary quality of care and coordination as a member of interdisciplinary team.
- Worked with Saturation Engineering Technicians to break down, repair, and retrofit a new saturation diving system.

RIGGER/DIVER   October 2010– January 2011
DivCon, LLC.
Morgan City, LA

- General duties which included construction, repairs and maintenance, equipment safety inspections, hull cleaning, underwater welding and inspection.
- Conducted routine dive barge maintenance including hydraulic system and tool repairs, welding, needle gunning to remove rust and painting, and pneumatic tool repair.
- Used standard communication signals to direct crane movements and send equipment to divers in the water adhering to company and OSHA safety guidelines.

PRODUCTION AND SHIPPING ASSISTANT/PRINTING LEAD   August 2009 – January 2010
Bardhal Manufacturing, LLC.
San Diego, CA

- Maintained records of completed pallets of products and managed all aspects of quality control for products before shipment.
- Actively engaged in all production, shipping departments, and printing departments.
- Achieved high production rates and meet all shipping deadlines.
- Worked with top management during double shifts to bring the companies fire safety and EPA standards within compliance.

FIBER OPTICS/DATA TELECOMMUNICATIONS TECHNICIAN   August 2005 – January 2006
TEKsystems, LLC.
Lowes in Longview, WA

- Worked with a crew of eight installing data telecommunication and security systems in a clean, safe, and efficient manner using a variety of lifts and tools.

FIBER OPTICS/DATA TELECOMMUNICATIONS TECHNICIAN   May 2004– November 2004
Impact Solutions, LLC.
San Marcos, CA

- Worked in a fast-paced independent environment to prewire with data, cabling, theater, telephone, and security systems in newly constructed townhomes. ⍰ Trained new employees on procedures and operations of installment.

Bangor Nuclear Submarine Base, Silverdale, WA

- Removed out-of-date telecom and information cabling systems and then rewired the system with fiber optics and CAT5 cabling.

LANCE CORPORAL   July 2003 – May 2004
United States Marine Corps
San Diego, CA

- Implemented detailed plans to ensure subordinates would meet and exceed deadlines for supply, ceremonial, night watch, and weekly barrack/uniform inspections.
- Maintained professional etiquette during civilian and military installations related to supplies, warehousing, and transportation. Recorded visits and performed quarter deck watch.

VOLUNTEER EXPERIENCE

Invasive Species Removal   July 2014
Pierce College Ft. Steilacoom, Lakewood, WA

Science Fair Judge   March 2014
Lakes High School, Lakewood, WA

Geology Presenter at Science Dome Opening   February 2013
Pierce College Ft. Steilacoom, Lakewood, WA