

Darrell L. Nelson II

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GitHub: https://github.com/darrellnelson2/Data_Science_Projects

EDUCATION

- M.S. Applied Data Science** 2018 – 2019
Syracuse University, Syracuse, New York
- B.S. Chemical Engineering** 2014 – 2016
Washington University in St. Louis, St. Louis, Missouri
- National Society of Black Engineers, Chapter Development Executive Chair
 - Gustav Kurt Mesmer Scholar
- B.A. in Chemistry** 2011 – 2014
Lewis & Clark College, Portland, Oregon
- Varsity Football, Co-Captain | Multicultural Union, Liaison | STEMs for Youth, Volunteer
 - Leadership & Service Student Award | Miller Science Scholar

TECHNICAL SKILLS

- Programming:** Proficient: Python, R, SQL, MATLAB & Octave
- Software:** Tableau, Google Analytics, Power BI, JMP, Eye-D, Quartz PCI, MindManager, Spartan, Mercury & Microsoft Office Suite
- Skills:** Statistical Modeling, Supervised & Unsupervised Learning, Anomaly Detection, Time-series Analysis, Classification, Clustering, Customer Segmentation, Bayesian Inference, Sentiment Analysis, Natural Language Processing, Data Mining, Artificial Intelligence, Statistical Analysis, Predictive Modeling & Data Science

PROFESSIONAL & PROJECT EXPERIENCE

Project Stakeholder Manager

- Oversaw process development life cycle of five generations of flash memory on the Producer workbench with key focus on performance and cost
- Managed clients (Micron Technology Inc.) in R&D and High-Volume Engineering to ensure quality performance of the Producer tools and process from: Proof of Concept, Optimization, Process Sensitivity, Hardware Variation, and Transfer to High Volume Manufacturing (HVM)
- Held weekly working level and upper management meetings and presentations to internal or customer multi-disciplinary teams consisting of project objectives, status, issues, and plans for the Producer projects
- Key Achievement:** Value creation: Integral factor in winning contracts for >\$20M in the span of two years

Data Analytics & Technology Expert

- Head engineer for day to day process/failure analysis, error reporting, troubleshooting, and process transfer to High Volume Manufacturer
- Led weekly internal task force meetings to align and execute on customer driven priorities
- Designed, coordinated, implemented, and supervised multivariate tests on all major/minor process and hardware changes
- Point of contact for process and hardware related issues/failures seen in the R&D and HVM facilities
- Key Achievement:** Taught production teams in Boise, ID and Singapore facilities how to enhance processes and tool capabilities for High Volume Manufacturing

Innovation Generation

- Developed novel hardware testing strategies on the Producer platform to ensure performance is within normal tolerances
- Created process sensitivity DOE to ensure process window was robust enough to handle normal tool to tool variation
- Key Achievement:** Responsible for starting up new tools and chambers in R&D facility

Sports Statistician (NFL)

- Used descriptive and predictive analytics to calculate probabilities of team finishes in NFL based on regular season performance in **Python**
- Used hold-out method to train and evaluate Machine Learning Models (supervised learners)
 - Models: Neural Network (NN), Gradient Boosted Classifier (GBC), Support Vector Machines (SVM), and Random Forest (RF)
- Reduced class bias with label limitations that accurately depict real-world situations
- Key Achievement:** Accurately predicted ~71% of test cases with GBC

Aerospace Structure Analyst

- Evaluated Triumph Group aerospace structure data in **R**
- Created correlation matrix to identify interdependencies between structures
 - Trained Linear Regression and NN models on interdependent parts to predict new out-of-spec relationships
 - Achieved ~74% training accuracy with NN model
- Identified outliers with 3-sigma quality control

- **Key Achievement:** Identified strongest and weakest processes in build-flow; Developed novel process limits based on interdependencies

Twitter Analyst

- Utilized text mining to evaluate probability of social media influence on college football recruiting and pre-season rankings in **Python**
- Obtained Twitter API data from Python library Tweepy for all collegiate football teams in Pacific-12 Conference
- Synthesized relevant features based on metadata
- Developed distance metric to rank features
- **Key Achievement:** Demonstrated that the number of retweets per tweet a team receives can influence the number and quality of recruits they receive

Customer Management

- Held bi-monthly meetings with customer counterparts to align on issues, results, new techniques, timelines, and hardware implementation
- **Key Achievement:** Built customer rapport and secured contracts for >\$20M in the span of two years

Salary Forecasting and Job Market Assessment

- Analyzed NYC job listings to determine demand for job skills, positions, and predict salary in **Python**
- Generated NB and SVM models to predict salary range based on minimum qualifications
- Achieved ~70% training accuracy with SVM
- **Key Achievement:** Salary and skills forecasting

Database Management at Community Tutors, LLC.

- Developed management system on **SQL Server** for my tutoring business
- Built Entity-Relational, Relational, and Logical Model Diagrams
- **Key Achievement:** Identified high-value problems and potential bottlenecks in business operations with SQL queries

People Development/Recruiting

- Led group and one-on-one discussions about the potential career opportunities at Applied Materials at University of Washington – Seattle
- Trained new hires in day to day operations

Key Achievement: Successfully recruited and hired candidate from Washington University in St. Louis

Mentor at Washington University in St. Louis

- Mentor Dual Degree students in the Mentor Collective program
- Assist mentees in career prep, goal orientation, and lifestyle coaching
- Published in “Applied Materials Journal of Engineering & Technology”
- Selected Speaker at Applied Materials Dry Etch Conference

Spring 2018
Summer 2017

PAPERS AND CONFERENCES

WORK HISTORY

Applied Materials Inc. Boise, ID
Process Support Engineer

2016 – 2018

INTERESTS RESEARCH

Tutoring, weightlifting, sports, hiking, and family

Experimental & Computational Investigation of the Synthesis of 1,3-Dienes by Au-Catalyzed Claisen Rearrangements of Allenyl Vinyl Ethers, *Presentation*

- Inquiry into mechanism behind diene conversion into natural rubbers and synthetic polymers

Machine Learning Approaches to Design Catalysts for C1 Chemistry, Cynthia Lo Ph.D.

- Database creation and maintenance of catalysts for CO₂ reduction
- Implemented machine learning tools in MATLAB and Excel to find patterns in catalyst composition and activity

OBJECTIVE

Data Scientist with experience in Flash Memory and semiconductor equipment actively seeking opportunities to work with big data in computational chemistry and catalyst synthesis. Candidate is motivated, hard-working and flexible. **Key skills include:** thriving under pressure, attention to detail, productive & focused multi-tasking, objective approach to problem solving, leading by example, communication to non-technical staff, and fostering strong teamwork environments.