Ryan M. Lee

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SUMMARY

Data Scientist with extensive experience in data analysis, statistical modeling, machine learning, and product management. Strong communication skills, a desire to learn, and the ability to work in a fast-paced and dynamic environment. Proficient in Python, R, and SQL, including libraries such as Scikit-learn, Tensorflow, Numpy, Pandas, Tidyverse, and MASS. Expertise in multivariate time series data analysis and modeling, with experience training stakeholders in analysis techniques and mentoring junior data scientists.

EDUCATION

Northwestern University | Evanston, IL — March 2021
Master of Science, Data Science — GPA 3.975

University of California, Davis | Davis, CA — June 2012
Bachelor of Science, Biological Sciences

PROFESSIONAL HISTORY

Amyris | Emeryville, CA — July 2022 - Present
Data Scientist 3

Responsible for developing Data Science strategy and modeling deep learning and machine learning for manufacturing data produced at a facility in Brazil. Establish statistical monitoring of fermentation systems to identify potential failures during manufacturing campaigns.

- Developed and deployed machine learning models to identify the root cause of performance issues in complex biological systems at the manufacturing scale.
- Successfully implemented time series forecasting models to predict gassing coefficients in real-time
- Used advanced machine learning techniques to identify the root cause of performance issues and implement changes, resulting in cost savings in the millions of dollars
- Created visually appealing and user-friendly dashboards to present model outputs to stakeholders
- Dashboard KPI metrics for the leadership team to understand failure modes and communicate current results, also implement changes identified by root cause analysis
- Collaborated with cross-functional teams to ensure seamless integration of models into the scientific workflow.
- Mentored Junior Data Scientist on a project to build new time series summary and performance metrics. These features enable more interpretable machine learning models.

Demetrix | Berkeley, CA — July 2018 - June 2022
Data Scientist & Technical Project Manager

Developed models and performed statistical tests to determine new processes, including scale-up from bench to commercial. Established data infrastructure for fermentation teams utilizing Python to expedite data analysis and ensure consistent user analysis.

- Deployed various autoencoder models utilizing Tensorflow to improve fermentation tank operations (including anomaly detection algorithms) utilizing deep learning to automate data analysis time and decrease processing time by 20%.
- Created custom visualization dashboards with Plotly Dash and Grafana to deliver relevant dynamic data, resulting in a 2-hour reduction in data processing time weekly
- Completed data mining of large data sets using various models, including random forests, gradient boosting, multivariate analyses, and clustering algorithms, which extract additional value from completed experiments.
- Developed ETL processes to deliver data and calculations to teams, including dashboards and aggregate data tables
- Managed fermentation platform, wrote technical requirements, tested software, and provided end-user support.

- Managed the concept-to-launch of an internal tooling system for experiment tracking for fermentation and high-throughput engineering teams' data.

Zymergen | Emeryville, CA   July 2015 - July 2018
Research Associate III
Responsible for the independent execution of small-scale fermentations to meet client targets across various organisms. Collaborates with project stakeholders to inform project deliverables while building a fermentation suite.

- Performed fermentations utilizing Eppendorf BioFlo and DasGip benchtop bioreactors with various organisms.
- Designed, executed, and analyzed process improvement experiments to further understand limitations of current fermentation processes.
- Utilized JMP to analyze statistical trends within data and create control charts to track process deviations generating more value from previous fermentations.
- Managed fermentation lab expansion for a 10x increase in tanks. Communicating with vendors to ensure timely delivery and mitigate reduced process throughput.
- Established documentation for standardized statistical analyses to allow consistent analysis across users and projects.

BP Biofuels - Global Technology Center | San Diego, CA   May 2013 - July 2015
Research Associate
Responsible for the independent execution of small-scale fermentations to aid biofuel process development efforts. Collaborate with project stakeholders to make decisions regarding experimental run plans and data outcomes in a dynamic and versatile lab environment.

- Executed small-scale experiments for biofuels process development efforts.
- Provided data analysis and input on potential follow-up experiments with bioprocess development scientists.
- Worked on various projects simultaneously between third parties and feasibility studies.
- Initiated a cross-functional quality control team to reduce data turnaround time.

Natural Alternatives International | Vista, CA   September 2012 - May 2013
Quality Assurance Technician
Tested raw materials to ensure conformance to specifications in a nutraceutical manufacturing facility. Responsible for cross-team support to ensure timely delivery of results in a fast-paced environment with packaging, production, purchasing, planning, and R&D departments.

- Tested raw materials to ensure conformance to specifications in a nutraceutical manufacturing facility.
- Provided cross-team support to ensure timely delivery of results in a fast-paced environment.
- Established reference models for botanical materials testing utilizing HPLC.