

About Me He has completed a Master's degree in Data Science at the AIM, where he has gained experience in utilizing data mining techniques, delivering machine learning models, and providing insights that are impact-oriented. He has worked in the financial services and energy industries for a total of seven years wherein he specialized in analyzing large datasets and coming up with data-driven insights.

Education Mar 2019 - Jul 2020

**Masters of Science,
Data Science
Asian Institute of Management**
Manila, Philippines

- Dean's List - 1st, 3rd, 4th Term, CGPA: 4.26/5.00
- Business Coursework: Economics for Business, Strategic Management, Project Management, Financial Management, Digital Marketing, and Language of Business (Accounting)
- Technical Coursework: Data Visualization, Data Mining, and Wrangling, Applied Computational Statistics, Machine Learning, Deep Learning, Big Data and Cloud Computing, Network Science, Geospatial Analysis, and Data Web Applications

Sept 2009 – May 2013

**Bachelors of Arts,
Dual Degree in Mathematics and Economics
College of the Holy Cross**
Massachusetts, USA

- Coursework: Labor Economics, Microeconomics, Macroeconomics, Econometrics, Financial Institution and Markets, Urban Economics, Probability Theory, and Mathematical Statistics

General Skills

Data Mining & Wrangling Data Visualization Machine Learning
Big Data & Cloud Computing Deep Learning
Data Structures & Algorithms Data Preparation
Budgeting and Planning Risk Management
Financial Analysis Sensitivity Analysis Market Research

Technical Skills

- **Operating Systems:**
Windows, MacOS, Linux
- **Database/Server:**
My SQL, Postgres, sqlite3
- **Programming Languages:**
Python (scikit-learn, keras, tensorflow, beautifulsoup, selenium, numpy, pandas, scipy, matplotlib, seaborn, bokeh, plotly, dask, apache-spark, airflow, networkx, omnx, flask, jinja), HTML, CSS, and Javascript
- **Other Software/Tools:**
Tableau, PowerBI, AWS Services, Git

Experience Aboitiz Power Corporation, Jul 2022 - Dec 2022

Analytics and Optimization Manager, Commercial Strategy - Analytics and Optimization

- Lead the development and updating of the existing portfolio management framework for the company's core 11 Thermal Power Plants using python. The updating streamlined the forecasting process from a 3-day turnaround time to a 1-day turnaround time and improved the visibility of the company's forecasted gross revenues, costs, and gross margins.
- Generated and provided upper management with data-driven recommendations for both short-term and long-term optimal portfolio management, in terms of contracting levels and downside risks/exposures. Recommendations were used for budgeting, planning, and strategic decisions for the Thermal Portfolio.
- Managed energy portfolio for the core 11 Thermal Power Plants to ensure energy supply can cater to Wholesale customers' demand requirements.
- Developed a data pipeline that downloads and monitors competitors' contracts. Results were provided to understand the energy market's existing pricing strategies and policies.
- Performed financial and macroeconomic sensitivity analysis on the thermal energy portfolio to understand the company's risk threshold and competitiveness.
- Provided regular market updates to various stakeholders of existing pricing campaigns.
- Generated financial reports for the SBUs and conducted variance analyses comparing actuals to the budget.

Team Energy Corporation, Nov 2021 - Jul 2022

Data Analytics and Digital Solutions Manager, Energy Sales Business

- Provided upper management with automated data-driven market reports and recommendations. Recommendations were used for pricing campaigns and bidding.
- Developed a roadmap and prioritization for the company's digital transformation initiative.
- Acted as product owner and technical point of contact with various vendors in the assessment and designing of a new ecosystem.
- Lead the Sales and Energy Trading teams in identifying, prioritizing, and scoping use cases, and Lead the IT team in designing data solutions and architecture.
- Audited the data quality of the different data sources of the company.

AIA Philippines, Mar 2021 - Oct 2021

Financial Risk Consultant, Risk & Compliance - Financial Risk

- Performed financial and product risk analysis on existing financial and pricing models, and conducted profitability analysis in relation to potential operational risks.
- Developed product portfolio & financial risk dashboards, that tracked the financial risk profile and risk exposure of the company.
- Lead review sessions with the Finance and IT units to ensure existing processes are compliant with group policies.
- Acted as a liaison with the (1) Finance and (2) IT Business Units, and Risk and Compliance Team for the effective implementation of all risk and compliance projects and activities.
- Lead Risk and Compliance culture improvement analysis by providing recommendations to improve the overall company, and internal team satisfaction based on internal and external surveys.
- Escalated key financial risks and actual (and potential) non-compliance incidents to the Head of Risk and Chief Risk Officer to ensure that potential risks or incidents are managed effectively.

Aboitiz Power Corporation, Jun 2020 - Oct 2020

Innovations Programs Manager, Innovations and Change Management

- Lead and spearheaded the innovation campaign across the entire company to assess innovation projects in terms of risks, resources, and business impact.
- Planned and developed a standard company-wide innovation guideline, policy and playbook.
- Lead the discussion with business units and technical teams to identify the prioritization of case cases.
- Provided insights and recommendations to upper management in the development of data science & machine learning workshops.
- Support the Innovations Vice President in monitoring and evaluating the effectiveness of innovation program design and implementation. A google dashboard was developed to monitor the program's effectiveness.
- Support the implementation of innovation capacity building in identified business units and teams

Aboitiz Power Corporation, Jan 2017 - Jun 2020

Margin Optimization Specialist, Power Systems Planning and Energy Economics

- Lead the development of a portfolio optimization decision tool that forecasted the financial positions for the entire group's retail energy business units and power generation assets. Simulations were used to manage the risk-adjusted optimal level of contracting, revenues, cost of goods, and gross margins, which were used for budgeting, strategic planning, and market studies.
- Applied data mining techniques and Monte Carlo simulations to portfolio optimization model to forecast the company's financial risk appetites and Value-at-Risk.
- Lead research for both local and global market trends in the energy industry. The research was used for feasibility studies for greenfield projects and campaigns.
- Collaborated with Energy Sales and Business Development business units by providing industry research, simulations, and insights. The research was mostly focused on pricing strategies and feasibility studies.
- Communicated financial model results and analytics reports to diverse stakeholders - from both upper management to individual contributors.
- Conducted Ad-hoc financial sensitivity analysis related to the different energy risk factors, such as macroeconomic (FX, Coal, Oil, Freight) and energy market risk factors.
- Created and managed automated web scraping scripts using Python, via APIs, to extract data from pertinent websites and databases.

Aboitiz Power Corporation, Sept 2013 - Jan 2017

Market Analyst, Power Systems Planning and Energy Economics

- Lead the development of decision-making tools that forecasts total revenues, costs, and gross margin for coal plants. Outputs were used as key inputs to commercial decision-making and long-term planning.
- Created self-serving customer pricing and segmentation decision tools for the Energy Sales team. The tool was used as a key input for customer bidding and pricing structures.
- Coordinated with the Energy Sales team in developing pricing strategies and sensitivity studies to understand customer behavior. The output would be used as a key input for energy pricing strategies for both wholesale and retail business units.
- Coordinated with Energy Trading and Business Development teams in researching the supply-side landscape. The output would be used as a key input for business development strategies for both wholesale and retail business units.
- Performed data cleaning, data preprocessing, and exploratory data analysis, and developed reports on market data to find trends and patterns in the energy industry.

Consulting Data Scientist, NRC-CCAR Dashboard, Jun 2020 - Jul 2020

- The project was with National Resilience Council (NRC) and Coastal Cities at Risk (CCAR) to create a web app that provides maps and epidemiological outbreak analysis for monitoring COVID-19 status for partner LGUs.
- Developed the front-end design of the web-based application.
- Developed a data visualization tool that monitors doubling time and absolute numbers.
- Conducted rapid prototyping workshops with stakeholders in defining needs.

Consulting Data Scientist, Content Analysis on Vaccines, Feb 2020 - Mar 2020

- Project with the Philippine Council for Health Research and Development (PCHRD) to analyze social networks of vaccine conversations on Twitter after the Dengvaxia issue in the Philippines.
- Performed temporal social network analysis over time given a dataset of tweets referring to Dengvaxia, dengue, and vaccines to determine communities and influencers.

Consultant for Mathematical Disease Modelling, Health Facility Planning for the Philippines: A Demand Supply Gap Analysis, Feb 2020 - Mar 2020

- The project was with Philippine Institute for Development Studies (PIDS) and Asian Development Bank (ADB) to determine the number of health facilities needed per year for the next 25 years, along with each facility's current supply in order to determine the requirement gap.
- The project also wanted to identify the criteria the government should use to allocate investments for health facilities and to determine how the Department of Health should monitor and assess the availability and quality of health facilities.
- Created a tool on Google for the calculation of resources needed to implement the Universal Health Care Law per province from 2020 to 2040 for specified diseases.

Data Mining and Wrangling, Discovering Underlying Themes, 2019

- Developed a web scraper to collect 11,079 news articles from Rappler's national section
- The articles were vectorized with a term frequency-inverse document frequency (TF-IDF) weighting and dimensions were reduced by implementing Latent Semantic Analysis (LSA).
- Implemented unsupervised learning via k-means algorithm and internal validation metrics were utilized to determine the optimal number of clusters. Ten clusters were uncovered, with Philippine president Rodrigo Duterte as the dominant cluster. The remaining themes touch on different branches of government, police and weather updates, and trending national issues.

Machine Learning, Predicting Mood and Polarity of Articles, 2019

- Developed a web scraper to collect a total of 5,735 Rappler articles with metadata such as category, author, and mood ratings were used as the training set.
- Modelled two classification algorithms to predict a Rappler article's dominant mood (happy, inspired, amused, sad, angry, afraid, annoyed, don't care) and polarity (positive mood or negative mood)
- Resulting models can predict the article polarity with 72% accuracy and the article's dominant mood with 51% accuracy, 16% and 68% baselines.

Big Data and Cloud Computing, Tips on Getting the Big Tip, 2020

- Conducted regression analysis using AWS on the New York Taxi Dataset, which contained 2 million observations, on how to maximize tipping amount for taxi drivers. The significance of this research is to allow taxi drivers to make more informed decisions on how to maximize tip generation.
- Highest model accuracy was from a linear regression with an L1 regularization since the emphasis was for higher interpretability. Top predictors from the study suggested the biggest determining factors of tip amount are the pickup and dropoff locations, specifically airports (LaGuardia and JFK), and famous locations (Financial District, Times Square, Penn Station, and Madison Square Garden).

Deep Learning, Predicting Solar Power Generation, 2020

- Developed a web scraper to collect hourly solar power plant data for four(4) solar power plants located in the Luzon and Visayas Grid.
- Implemented multiple deep learning algorithms (MLP, CNN, LSTM) to arrive at a model with the lowest MAPE (Mean absolute percentage error). The resulting model with the lowest error was a 2-layer LSTM model, where accuracy increased by 70% on average.