

# FRANCIS AYAYEN

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[francisayayen.github.io](https://francisayayen.github.io) 

>> DATA SCIENCE | MACHINE LEARNING

## MOTIVATION

*I am passionate about using Data Science and Machine Learning to address and resolve business challenges. I methodically and innovatively leverage my skillset to deliver tangible value to both the team and the overall business, ultimately benefiting the end-user. I am constantly learning and seeking ways to further improve and excel.*

## SKILLS & TOOLS

**Programming:** Python (Pandas, Numpy, Matplotlib, Scikit-Learn, Scipy, Streamlit, Keras), SQL  
**Machine Learning:** Linear & Logistic Regression, Decision Trees, Random Forest, k-means, KNN, PCA, Association Rule Learning, Causal Impact Analysis, Deep Learning (ANN & CNN)  
**Other:** Statistics, Github, Data Visualisation, MS Office, Tableau, Jupyter Notebook

## PROJECTS

### Marketing Mailer Campaign Optimization

- Created and applied a **Random Forest** classification model to support the optimisation of a marketing campaign. By analysing customer data from the previous campaign. This model **accurately predict** potential customer sign-ups, enabling **targeted campaigns** and **providing insights** into key drivers behind membership, ultimately **reducing costs** and **improving ROI**.

### "You Are What You Eat" Customer Segmentation

- Used **k-means clustering** on grocery transaction data to split out customers into distinct "shopper types" that could be used to better understand customers over time, and to more accurately target customers with relevant content & promotions.

### Fruit Classification Using A Convolutional Neural Network

- Built & optimised a **Convolutional Neural Network** to **classify images** of fruits, with the goal of helping a grocery retailer, considering a robotic solution coupled with **computer vision** capability, enhance & scale their sorting & delivery processes.

### "Frequently Bought Together" Customer Recommendation

- Used **Association Rule Learning** to analyse the **transactional relationships & dependencies between products** in the alcohol section of a grocery store and enable marketing team to start running **"bundled" promotions**.

## COURSES & CERTS

### DSI Data Science Professional Certification

**Actionable Learnings:** Extracting & manipulating data using SQL. Application of statistical concepts such as hypothesis tests for measuring the effect of AB Tests. Utilising Github for version control, and collaboration. Using Python for data analysis, manipulation & visualisation. Applying data preparation steps for ML including missing values, categorical variable encoding, outliers, feature scaling, feature selection & model validation. Applying Machine Learning algorithms for regression, classification, clustering, association rule learning, and causal impact analysis for measuring the impact of an event over time. Machine Learning pipelines to streamline the ML pre-processing & modelling phase. Deployment of a ML pipeline onto a live website using Streamlit. Using Tableau to create powerful Data Visualizations. Turning business problems into Data Science solutions.

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### EXPERIENCE

*With more than a dozen years professional experience in the ITAM industry, in my various roles as Software Asset Analyst/Manager, the primary challenge revolved around efficient software license management and compliance, and cost optimization. Solving this business problem encompassed a ranges of tasks*

- Collecting and processing data related to software licenses and usage to cleaning and structuring data for analysis, with a focus on identifying patterns and trends in software usage.
- Additionally, a significant aspect involved problem-solving, specifically in identifying and resolving data-related issues and discrepancies within the software inventory. These required a keen eye for detail and a systematic approach to troubleshooting data inconsistencies.
- Moreover, a pivotal component of the role was the automation of data extraction and analysis processes, streamlining routine tasks and bolstering operational efficiency.
- At times leveraging SQL for querying databases and extracting pertinent information was integral, along with a deep understanding of database structures and relationships.
- Data privacy and security compliance were paramount, necessitating adherence to regulations and the implementation of robust data protection measures.
- Strong communication skills were also instrumental in conveying findings effectively to non-technical stakeholders and fostering collaboration among cross-functional teams.
- Lastly, utilizing tools like Excel or Tableau to create dashboards, reports, and other visualizations further enhanced the ability to communicate complex data insights in an accessible manner.
- The impact of these actions was substantial, resulting in streamlined software licensing processes, reduced compliance risks, improved cost optimization through data-driven decision-making, and enhanced software management capabilities across the organization.

**SAM Lead Analyst (FTC) - Deloitte LLP**  
Sept 2022 - Apr 2023

**Senior Solution Engineer (FT) - Flexera Software Ltd (ITAM/TVO tools)**  
Apr 2022 - Aug 2022

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### EDUCATION

**BSc (Computer Sciences)**  
Missouri State University, USA

**MBA (Computer Information Systems)**  
Missouri State University, USA