

Butter Payments

Product Data Science

- Estimated Revenue and Lift impact sizing for new product ideas and new experiment variants

Payment Method Optimization Experiments

- tested lift impact from optimizations to payment information at transaction time with an iterative experimental framework

Payment Gateway MID-routing optimizations

- partnered with ML Eng to execute a series of routing experiments estimated to yield 750k in annual revenues for a single customer

Customer-facing Product Research and development

- Led product discovery calls with customers to gather product requirements and user research
- PRD to MVP with Payment Insights dashboard product. Demo'd and released to 3 clients
- Prototyped payment segmentation product to help marketing teams identify their best and worst customers, target the best users, and payment processing strategies

Rocket Money

Churn Model

- 7d prior can we predict tomorrow, 7D, 14D, etc.
- Used Gradient Boosted Classifier in BQML

Charge Decision Billing Model - whether an account is in good enough shape to charge for our subscription.

- Optimized the payment retry strategy to save ⅔ costs of billing while maintaining collections. Saved more for uncollectibles.

Cashflow Prediction Model

- how much is safe to spend at any given moment for a user. Incorporated subscription data to understand average spending balances.
- Used components of time-series analysis to identify covariates with seasonality and recurring expenses and incomes.

Experimentation Best Practices Consultant

- provided power, Sampling, Statistical Significance guidance to product analytics team

Churn breakdown

- Identified and prioritized interventions on the biggest areas of opportunity for recovering revenues from involuntary churn; premium billing voluntary vs. involuntary churn

Engagement Modeling

- Built in productionized process to label users weekly based on their app engagement. Labels included: new , current, mau-at-risk, qau-at-risk. These were used to segment and serve specific message, marketing, or offerings based on user engagement status.

Microsoft

Subscription Detection Algorithm

- implemented an algorithm in python to find recurring transactions within a set of a users' historical bank transactions.
- Built API endpoints in django to deliver detected subscriptions details to frontend (Excel interface)

Transaction Insights

- Use python to devise large transaction and subscription price change detection algorithms based on deviations from statistical norms; delivered as endpoints in django that were consumed for display in the frontend client
- Built insight feedback framework to utilize users' thumbs up or down response to reorder insights in their interface.

MileIQ Experiments

- Built an A/B test evaluation pipeline for drive processing algorithm improvements
- Took raw drive detection logs → built curated dataset as champion→ compared and evaluated again test algorithms → visualize key metrics (route detection accuracy, drive distance accuracy, etc.)

Eaze

LTV model

- used a simple OLS linear model created from only cohorts with 12 months of data to extrapolate to a 24-month cohort-based LTV model. Python, Mode
- productionized the model to update monthly with a new prediction based on updated actual values.
- used to inform revenue accounting for user acquisition and retention by helping to determine maximum CAC costs per channel (given forecasted cohort LTV). It also was useful for illuminating cohort-related marketing spend trends - especially as they relate to customer-facing changes in business (i.e. raised prices, added fees, law change)

Line Item Sales Table -

- table quickly became a go-to resource for Finance, Growth, and Ops.
- Included every line item purchase across all users

- Supported product analyses, promotional code costs, and average order values for different user cohorts

Acxiom

Balcon Model

- worked with Analytics consulting group to R from SAS, convert to parallel, optimize for time. I converted to parallel and reduced test runtime to 1/7 the serial runtime using Enterprise R, SparkR in an Azure Env.

Data Leakage Detection Service

- Uses similarity metrics (jacquard distance, cosine, etc.) and probabilities to determine whether data in one file is from another file. Statistical probabilities associated with similarity of the frequency distributions across fields determined whether data was deemed leaked or not.

Abby - Natural Language Interaction

- API.ai, Heroku, Github with Python to set up a chatbot that delivered data upon request.

Abby - Voice Search for Segments: extract intent

- description breakdown to effective search terms using NLP techniques
- techniques used are RAKE, Entity Extraction (NLTK) , SPACY

Abby - Search to Segment

- expand search terms; cull search term set
- scrape google snippets
- search DBpedia
- rank Search Terms based on Cosine Distance From data (tags and text)
- search using elasticsearch
- returns a set of relevant data segments
- Concept applied as client solution for natural language product search for a large foreign retail company.

Postdoc at University of California - Davis

Response Inhibition task and Meditation - Used Matlab to do Second Order Blind-source Identification (SOBI - a kind of PCA for dimensionality reduction) to clean signal, used Multilevel Multivariate regression to assess changes in performance on the attention task before, during, and after a 12 week meditation retreat in active retreatants and controls who lived at the retreat site but did not actively meditate. ← very well-versed in hypothesis-testing, causal inference, experimental design, which are all necessary for well-conducted A/B tests.