



Reimagining customer insights,  
risks, & relationships through  
machine learning

# Housekeeping

- This meeting is being recorded
- The recording and slides will be shared
- Ask questions in the Q&A box

Our gift to you

# Machine Learning Use Case Guide for Banks



# Intros



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# Agenda

- Customer relationships in the post-COVID world
- Understanding customer journeys through machine learning
- Tailoring and optimizing your sales and marketing collateral to drive bank cross-sell and manage risk
- Q&A

# Where we are

Banking in 2021

# Tailwinds coming out of 2020

20M

Over 20,000,000 Americans banked online for the first time

10%

U.S. savings rate increased over 10%

90%

90% trust in local banks - the banking industry is viewed more favorably than ever

# Digital Native Headwinds

**ROCKET**  
Mortgage  
by Quicken Loans



**SoFi** 

 **venmo**

**Robinhood** 

**stripe**



# Opportunities moving forward



Your bank has deep and rich data about your customers



You own the personal relationship



Your high net-worth clients have discomfort with digital channel dependency for wealth management



# Extracting value from data



Data offers no intrinsic value; it only provides value when leveraged to drive insights and decision-making

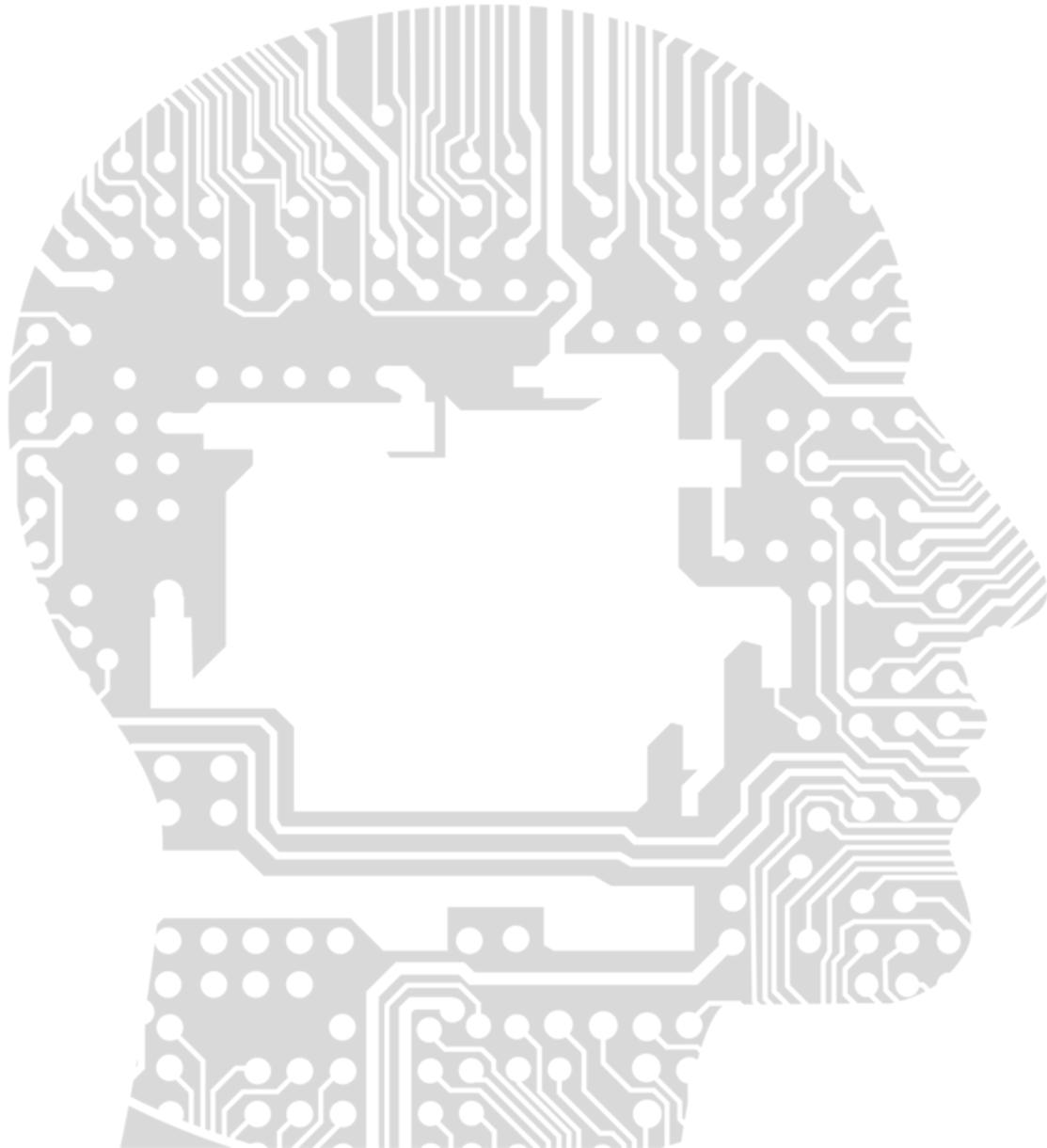


Machine learning is the modern technique to unlock this capability



# Uncovering Patterns in Data

How does machine learning help your bank?



# What is Machine Learning

Machine learning at its most basic is the practice of using algorithms to parse data, learn from it, and then make a determination or prediction about something in the world. – Nvidia

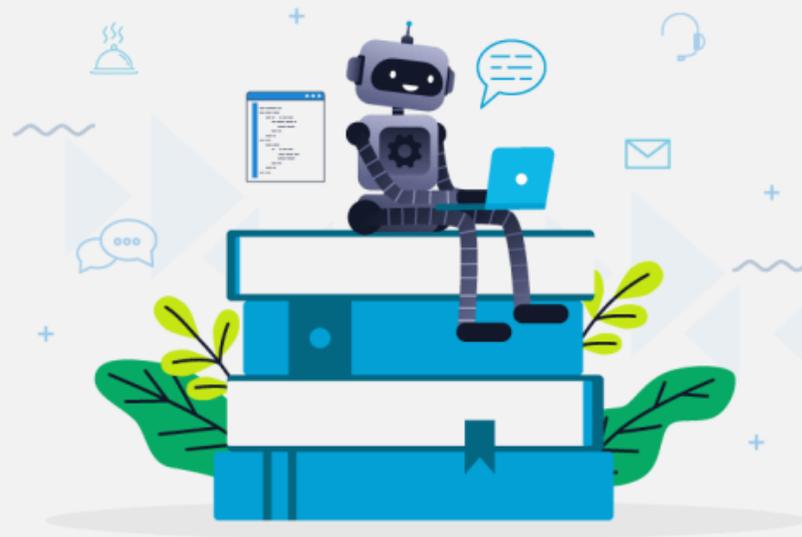
# What is Machine Learning

## Human



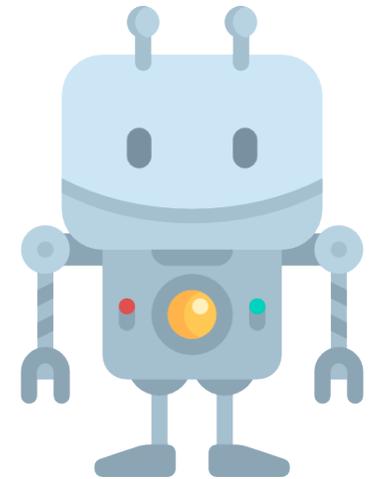
- Humans learn from experience.
- They use sensory inputs such as vision, touch, hearing, taste to learn

## Machine + Learn from Experience



- Ability to learn from past experiences
- Able to identify patterns in the data (beyond the capabilities of humans)
- Able to rapidly apply those predictions based on new data

## Machine



- Earlier machines followed instructions
- Humans provide logic and rules in order to get the job done



# What happens when a customer buys a credit card?

Customer:

- Applies for credit card
- Engages with marketing campaign



Today

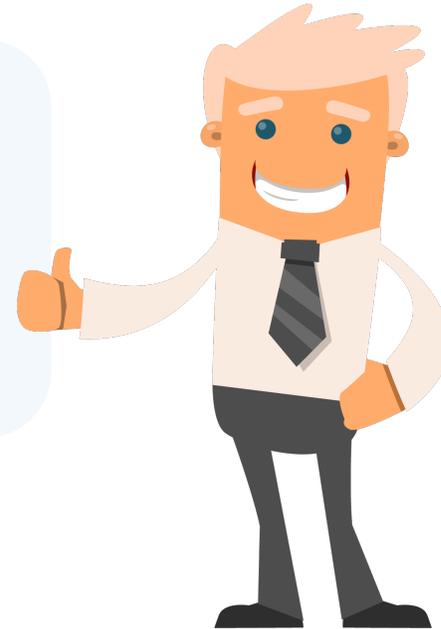
# What happens when a customer buys a credit card?

## Customer:

- Engages with email campaign

## Deposit Accounts:

- Increase in categorical spending
- Reduction in cash reserve



1 Month Ago

Today

# What happens when a customer buys a credit card?



## Customer:

- Engages with email campaign

## 3<sup>rd</sup> Party Data:

- Increase in credit rating
- Changes in credit disposition

## Deposit Accounts:

- Increase in categorical spending
- Reduction in cash reserve

3 months ago

1 Month Ago

Today

# Using ML to uncover patterns



## Transaction History

- Price sensitivity
- Risk tolerance

## Demographics

- Median income by home address
- Gender spending
- Distance to branch

## Interactions

- Online banking clicks
- Location of review
- Time of day

Survey says ... Bob has a 45% chance of buying a credit card within in the next 2-3 months



# Cross-selling bank products with ML

Practical application of machine learning



# ML Enabled Bank



## This is Tom.

Tom is a customer at your bank and you're looking for opportunities to cross sell to him. Let's walk through the journey of what you could do if you were using machine learning effectively.

# ML Enabled Bank



Machine learning indicates that Tom may be interested in a mortgage loan.

Tom is served a landing page to show his **personalized offers:** mortgage loan, receive \$1000 on signup



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ML enables a propensity-to-buy model to **identify whom to retarget** & a channel propensity to **identify right outreach channel**. Tom didn't convert earlier, but it's recommended he may best be reached via email.

You send Tom an email reminder for mortgage loan with waived processing fee.



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**The caller is equipped with Tom's analytical profile** and can inform him about areas of sensitivity to answer common lending questions and assist him in his journey.



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Tom completes online form, provides details for employment verification, and sets up an online payment mandate

**ML capabilities conduct relevant fraud checks**



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The loan is disbursed to Tom. This curates the catalog of offers sent by email to him for the future.

His activity leads to more potential **personalized cross-sell and upsell offers**.



- Site Navigation
  - Home
  - Customers
  - Services
- Predictive Analytics
  - Customer Valuation
  - Customer Retention
  - Service Matching

### Potential Customers

 <p><b>Jen Green</b> Customer ID: D4323D38</p> <p>  </p>	 <p><b>Tanek Little</b> Customer ID: 73136123</p> <p>  </p>	 <p><b>Leonard Vaughn</b> Customer ID: 4F04320C</p> <p>  </p>
 <p><b>Raymond Obrien</b> Customer ID: FB6EC069</p> <p>  </p>	 <p><b>Kirk Houston</b> Customer ID: 7B55C45E</p> <p>  </p>	 <p><b>Yardley Chapman</b> Customer ID: D83C7FD3</p> <p>  </p>
 <p><b>Macon Lyons</b> Customer ID: 2519F128</p> <p>  </p>	 <p><b>Demetrius Gallegos</b> Customer ID: F91725D4</p> <p>  </p>	 <p><b>Sean Diaz</b> Customer ID: BFF6C3F5</p> <p>  </p>

- Site Navigation
- Home
- Customers
- Services
- Predictive Analytics
- Customer Valuation
- Customer Retention
- Cross-sell Opportunities

 **Jen Green**  
Customer ID: D4323D38



<b>Confidence</b> 47%	<b>Satisfaction</b> 70%	<b>Balance</b> \$20,001
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<b>Customer ID</b>	D4323D38
<b>Account Number</b>	422567898
<b>Member Since</b>	2009
<b>Email</b>	jen.green@gmail.com
<b>Phone</b>	(406) 146-9163
<b>Address</b>	7981 Magna Avenue Dallas, TX 37762
<b>Organization</b>	ABC Solutions
<b>Occupation</b>	Consultant
<b>Annual Income</b>	\$65,000
<b>Marital Status</b>	Married
<b>Dependents</b>	2
<b>Number of Accounts</b>	3
<b>Credit line</b>	\$20,000

- Top Predictive Factors**
- Clicked on mortgage rates & offers
  - Marital status changed to "Married"
  - Added new direct deposits
  - Direct deposit amounts increasing
  - Increasing ratio of debit transactions

- Suggested Actions**
- Send mortgage rates & offers
  - Send digital solicitation
  - Contact customer

- Completed Actions**
- Send mortgage rates & offers - completed on 4/14/2021
  - Send digital solicitation - completed on 4/14/2021
  - Contact customer - completed on 4/11/2021

- 1/9/2021: Jen requested for a credit line increase
- 10/11/2020: Marketing solicitation sent
- 6/23/2020: Account balance increased to \$20,000
- 3/15/2020: Jen called regarding a service fee being charged to his account.
- 12/6/2019: User checked balance online
- 11/16/2019: User checked balance online
- 10/27/2019: User checked balance online
- 10/17/2019: User checked balance online
- 10/7/2019: User checked balance online
- 9/17/2019: Gin visited the branch
- 1/22/2011: Account opened



# ML Jumpstart

Accelerate your machine learning initiative



# ML Jumpstart & Accelerators



## Workshop

Learn how to capture high value use cases

## Execution

Use case selection and execution of a high-value use case

## Platform Development

Create a platform for the development of the ML CoE

# ML in the real world

## Machine learning predicts outcomes at Primary Financial

How does a financial services firm improve sales targeting to predict its clients' desires to invest? Machine learning was the answer for PFC. Find out why.

## Large bank applies machine learning to reduce multibillion-dollar cash reserves by \$40M

A large institutional bank solved a recurring issue of more accurately predicting cash reserves. See how machine learning made it possible.

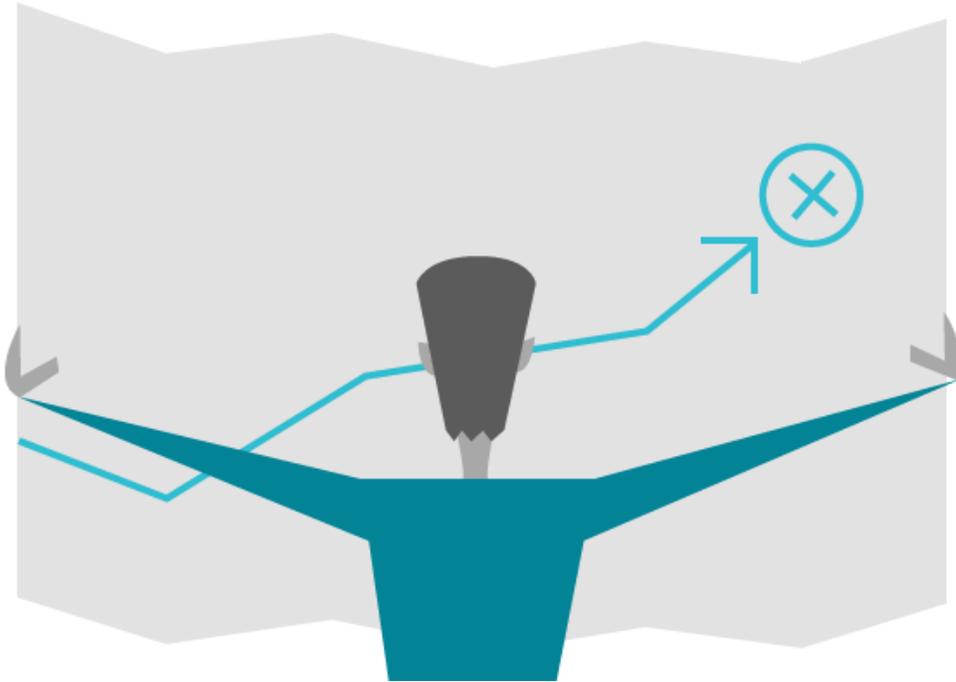
## Regional bank identifies over \$100M in at-risk deposits through machine learning

A regional bank wanted to reduce attrition to retain millions of dollars that flee when customers close their accounts. Machine learning helped predict which checking accounts are likely to close so that they could change the outcome.

# Summary



# Summary



## Understand customers to drive bank activity

Machine learning can find patterns in your data and use those patterns to predict future behavior to enable banks to tailor experiences on a per-customer basis

## Leverage data as your competitive advantage

Compete with other financial service providers by leveraging your digital and personal relationship with the customer

## Increase wallet share

By better understanding our customers, you can deliver the right product at the right time to develop greater wallet share and become a better bank for your customers



# Questions



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# Thank you



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