AI as a Strategic Asset

Building Competitive Advantage in Financial Services and Enterprises

Conf42 | Large Language Models (LLMs) 2025

Jitender Jain, Software Engineer

About Me

Jitender Jain

Inventor | UNITED STATES PATENT AND TRADEMARK OFFICE uspto

Forbes | Technology Council OFFICIAL MEMBER

Working in Financial Technology for more than 17+ years

Former Principal Software Engineer at Capital One

Software Engineering, Cloud Computing, Artificial Intelligence

Disclaimer

The opinions expressed herein are my own personal opinions and do not represent my employer's view in any way

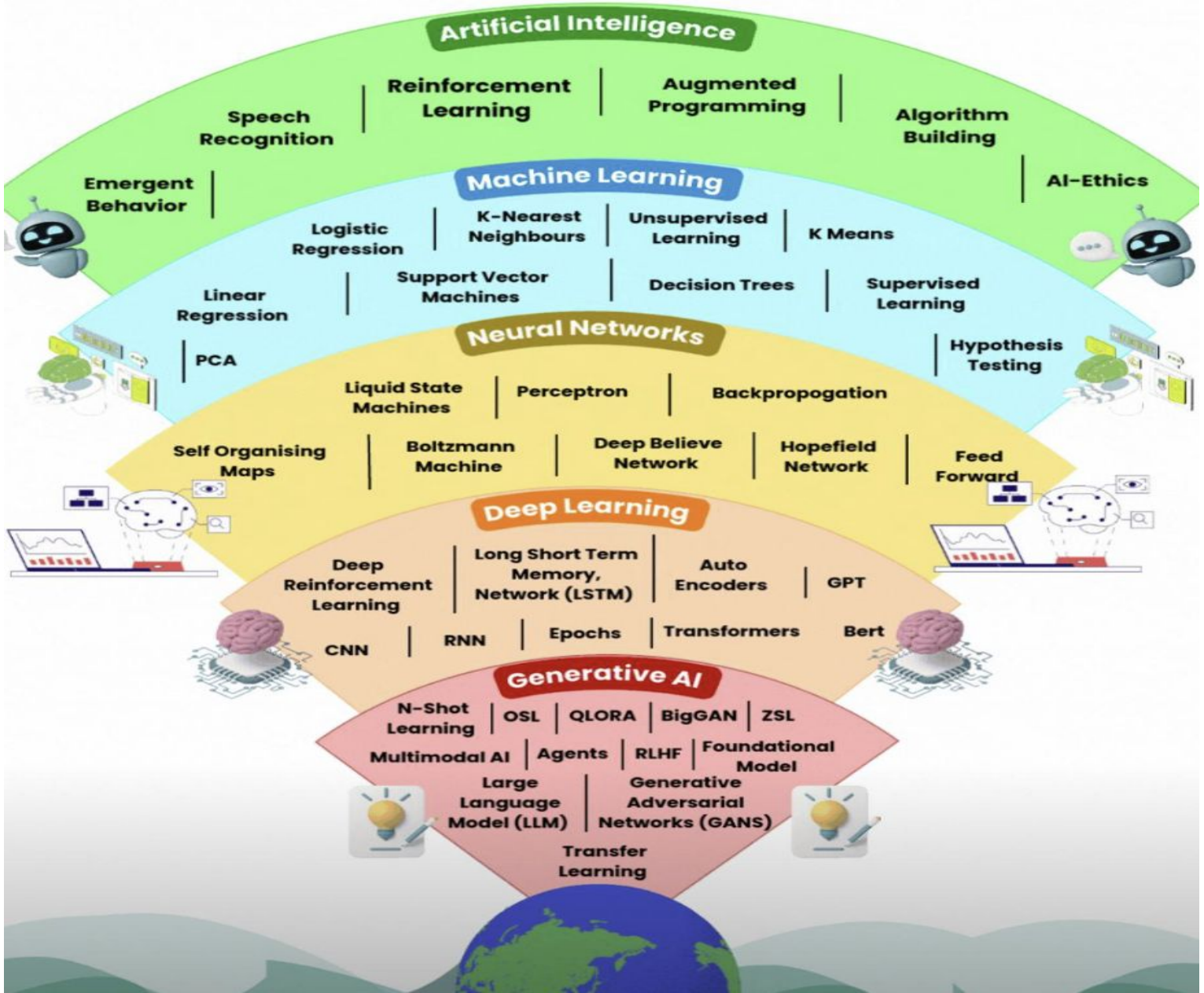
Agenda for the Talk

- Intelligence
- Business Predictions
- Industry Use Cases – overview
- Applying AI in Financial Services
- Case Study – Loan Income Verification
- Implementing AI: Strategies for Success
- Challenges and Considerations
- Future Outlook

What makes one intelligent?

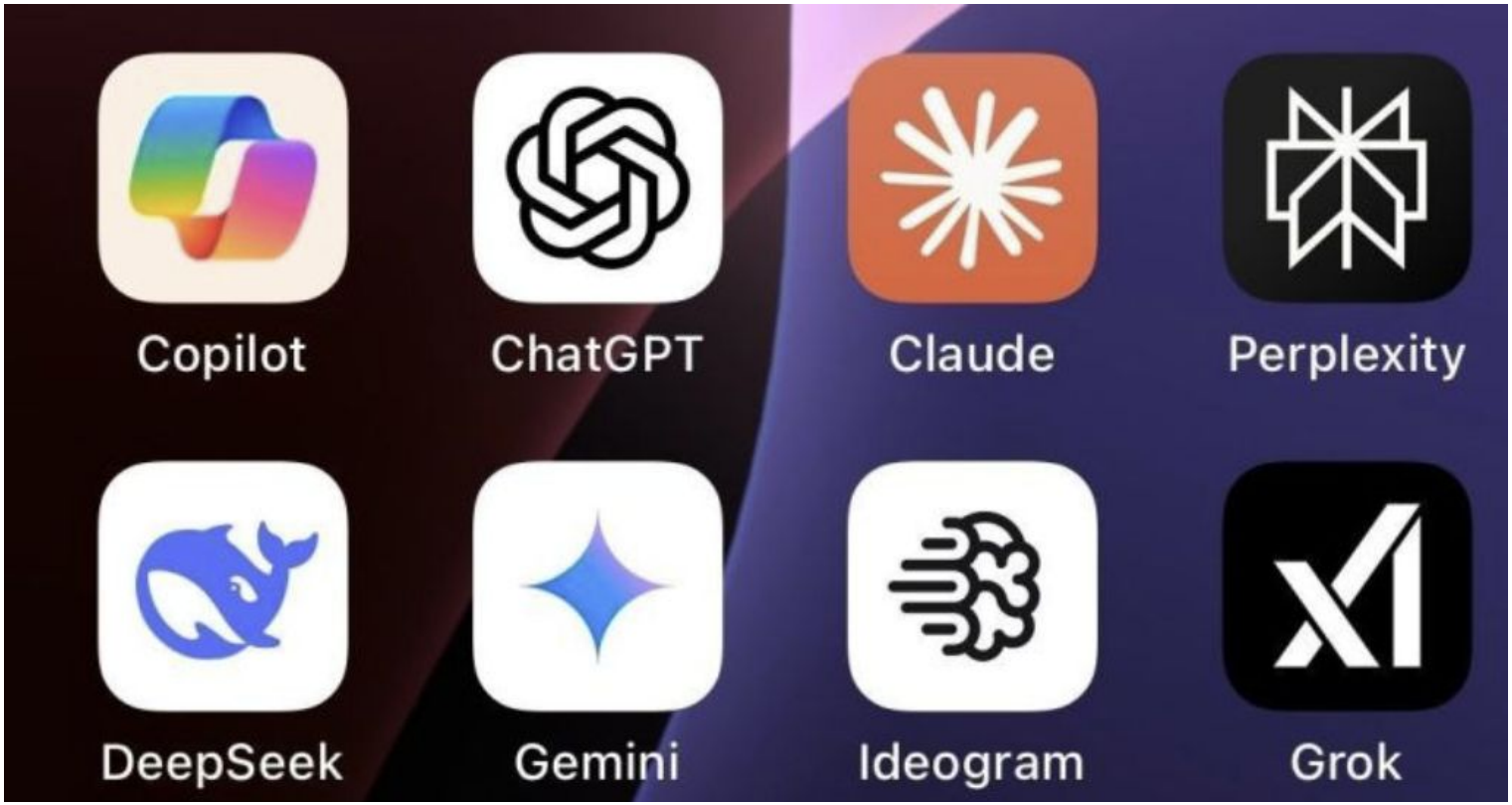
- You learn to Recognize
- Make mistakes and learn from it
- Make sure that you learn from the learnt aspects
- You sometimes go by your Gut Feelings
- Create Perspectives and we learn to work with it

WORLD OF AI


Artificial Intelligence
Speech Recognition
Reinforcement Learning
Augmented Programming
Algorithm Building
Emergent Behavior
AI-Ethics
Machine Learning
Logistic Regression
K-Nearest Neighbours
Unsupervised Learning
K Means
Linear Regression
Support Vector Machines
Decision Trees
Supervised Learning
PCA
Neural Networks
Hypothesis Testing
Liquid State Machines
Perceptron
Backpropogation
Self Organising Maps
Boltzmann Machine
Deep Believe Network
Hopefield Network
Feed Forward
Deep Learning
Deep Reinforcement Learning
Long Short Term Memory, Network (LSTM)
Auto Encoders
GPT
CNN
RNN
Epochs
Transformers
Bert
Generative AI
N-Shot Learning
OSL
QLORA
BigGAN
ZSL
Multimodal AI
Agents
RLHF
Foundational Model
Large Language Model (LLM)
Generative Adversarial Networks (GANS)
Transfer Learning

Famous AI tools

possibilities are endless



Business Predictions >>

- Your company's AI success will be as much about vision as adoption
- Your AI strategy will put you ahead — or make it hard to ever catch up
- Your workforce could double — thanks to AI agents

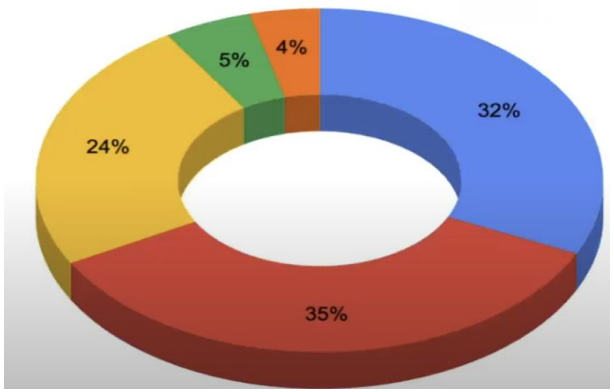
Productionizing AI/ML models

- Based on the survey, data scientists say that about 20% of models generated are deployed.

- Major reason: Models Are Rarely Deployed in Production : An Industry-wide Failure in Machine Learning Leadership

  Source: https://www.kdnuggets.com/2022/01/models-rarely-deployed-industrywide-failure-machine-learning-leadership.html

What is the main impediment to model deployment?



32% - Decision makers unwilling to approve the change to existing operations

35% - Technical hurdles in implementing/integrating the model or its scores into existing operations

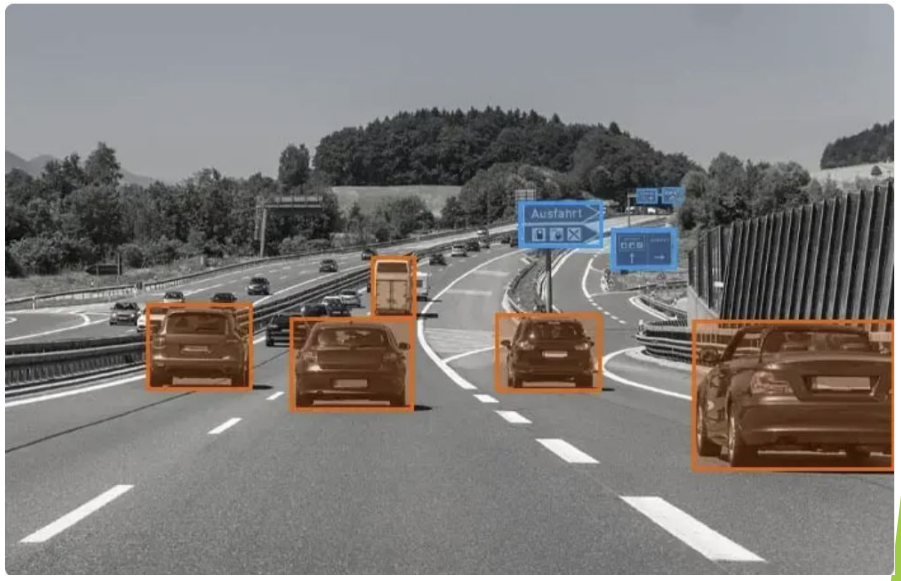
24% - Model performance not considered strong enough by decision makers

5% - Privacy / legal issue

4% - Others

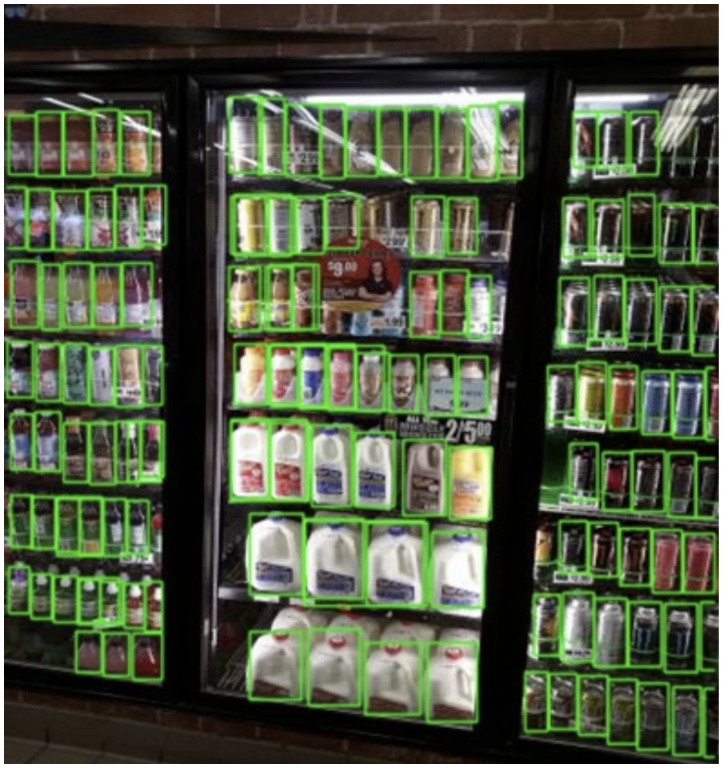
Industry Use case

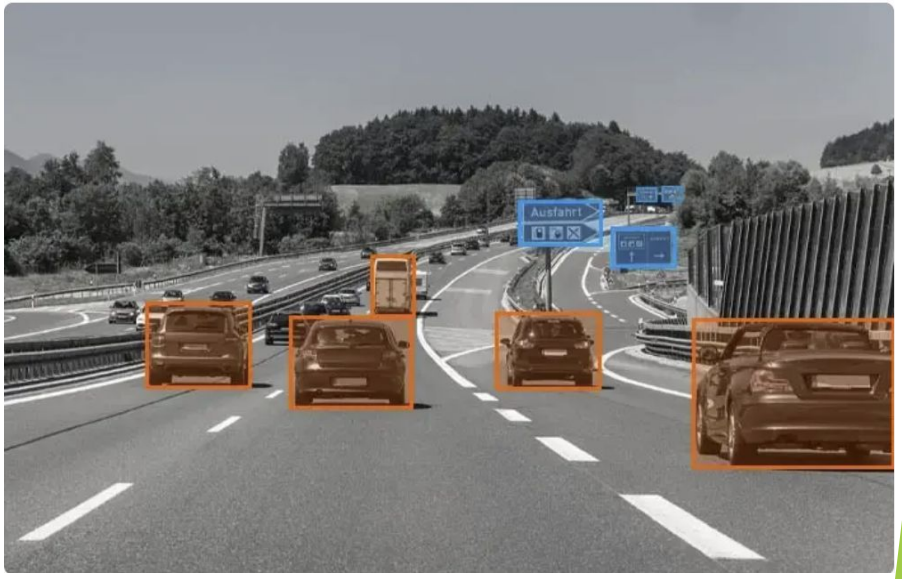
Object Detection
Autonomous Vehicles



Industry Use cases

Object Detection
Retail Inventory

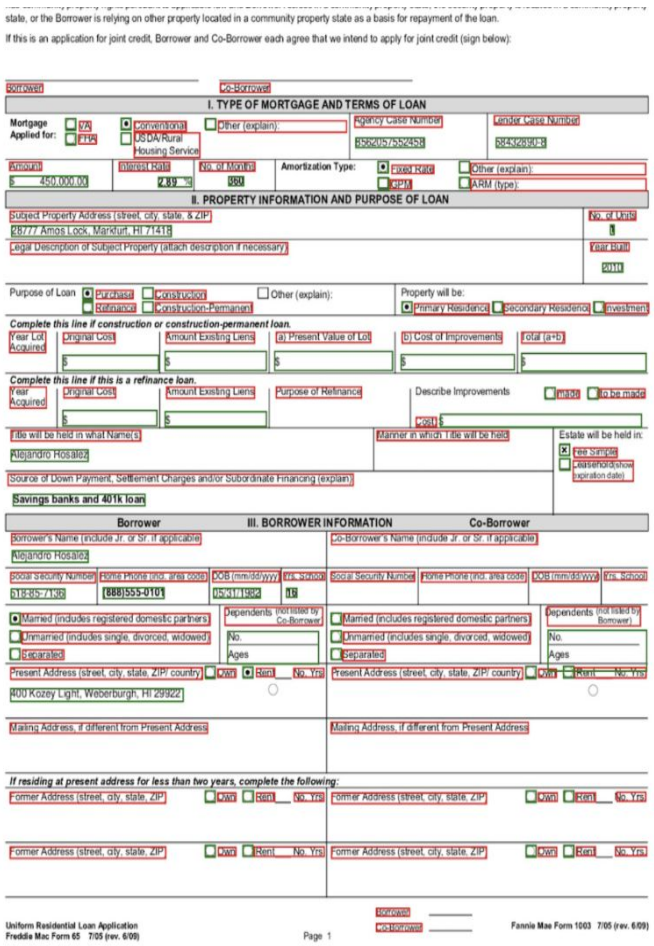




Industry Use case

Object Detection

Financial Document



state, or the Borrower is relying on other property located in a community property state as a basis for repayment of the loan.

If this is an application for joint credit, Borrower and Co-Borrower each agree that we intend to apply for joint credit (sign below):

Borrower | Co-Borrower

I. TYPE OF MORTGAGE AND TERMS OF LOAN

Mortgage Applied for: ☐ VA ☐ FHA ☒ Conventional ☐ USDA/Rural Housing Service ☐ Other (explain): | Agency Case Number: 3562057552458 | Lender Case Number: 5843289068

Amount: $ 450,000.00 | Interest Rate: 2.89 % | No. of Months: 360 | Amortization Type: ☒ Fixed Rate ☐ GPM ☐ Other (explain): ☐ ARM (type):

II. PROPERTY INFORMATION AND PURPOSE OF LOAN

Subject Property Address (street, city, state, & ZIP): 28777 Amos Lock, Markfurt, HI 71418 | No. of Units: 1

Legal Description of Subject Property (attach description if necessary): | Year Built: 2010

Purpose of Loan: ☒ Purchase ☐ Construction ☐ Refinance ☐ Construction-Permanent ☐ Other (explain): | Property will be: ☒ Primary Residence ☐ Secondary Residence ☐ Investment

Complete this line if construction or construction-permanent loan.

Year Lot Acquired	Original Cost	Amount Existing Liens	(a) Present Value of Lot	(b) Cost of Improvements	Total (a+b)
	$	$	$	$	$

Complete this line if this is a refinance loan.

Year Acquired	Original Cost	Amount Existing Liens	Purpose of Refinance	Describe Improvements	☐ Made ☐ To be made
	$	$		Cost: $	

Title will be held in what Name(s): Alejandro Rosalez | Manner in which Title will be held: | Estate will be held in: ☒ Fee Simple ☐ Leasehold (show expiration date)

Source of Down Payment, Settlement Charges and/or Subordinate Financing (explain): Savings banks and 401k loan

III. BORROWER INFORMATION

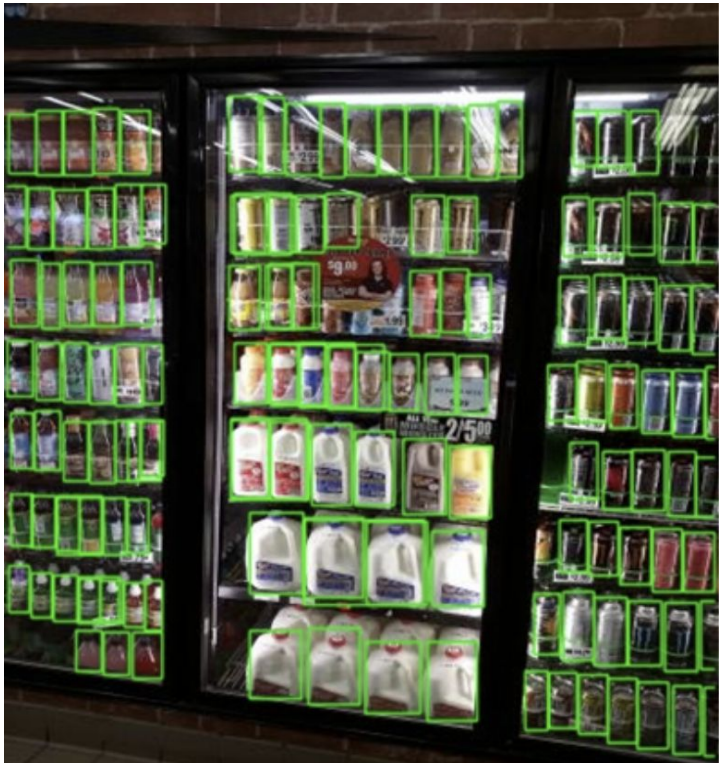
Borrower	Co-Borrower
Borrower's Name (include Jr. or Sr. if applicable): Alejandro Rosalez	Co-Borrower's Name (include Jr. or Sr. if applicable):
Social Security Number: 518-85-7136	Home Phone (incl. area code): (888)555-0101
DOB (mm/dd/yyyy): 05/31/1982	Yrs. School: 16
☒ Married (includes registered domestic partners) ☐ Unmarried (includes single, divorced, widowed) ☐ Separated	Dependents (not listed by Co-Borrower): No. Ages
Present Address (street, city, state, ZIP/ country): 400 Kozey Light, Weberburgh, HI 29922	☐ Own ☒ Rent No. Yrs
Mailing Address, if different from Present Address:	
If residing at present address for less than two years, complete the following:	
Former Address (street, city, state, ZIP):	☐ Own ☐ Rent No. Yrs
Former Address (street, city, state, ZIP):	☐ Own ☐ Rent No. Yrs

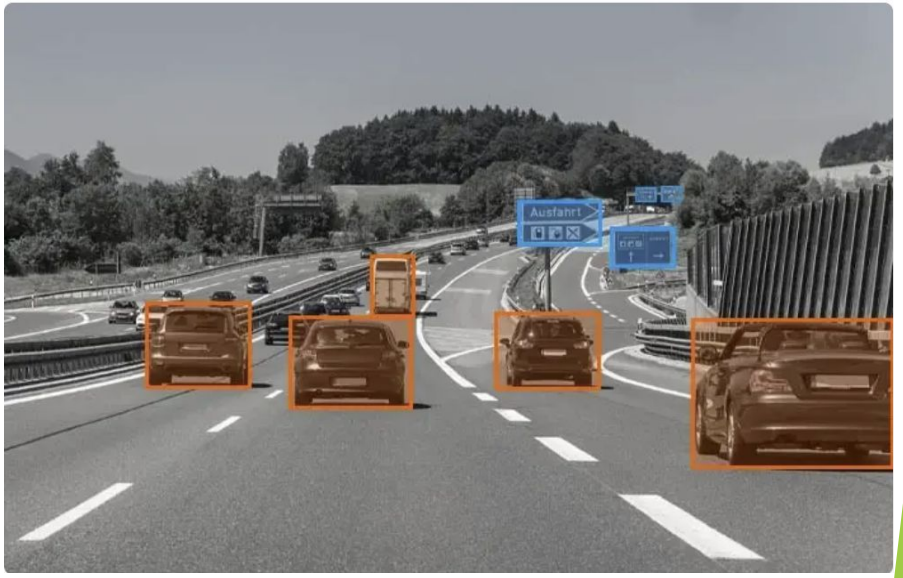
Borrower | Co-Borrower

Uniform Residential Loan Application
Freddie Mac Form 65 7/05 (rev. 6/09)

Page 1

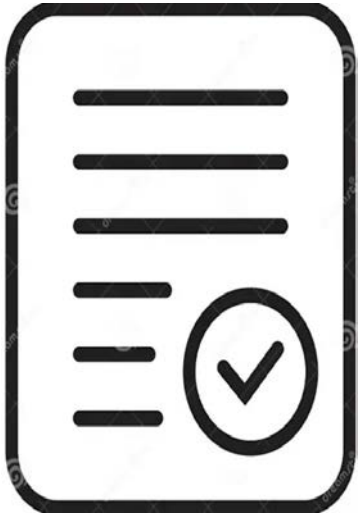
Fannie Mae Form 1003 7/05 (rev. 6/09)





Applying AI in Financial Services

- Document processing
  - Loan applications
  - Invoice and Receipt Management
  - KYC (Know Your Customer) Compliance
  - Contract Analysis



Applying AI in Financial Services

- Document processing
- Fraud Detection and Prevention
  - **Anomaly Detection Algorithms**: Identifies unusual patterns
  - **Real-Time Transaction Monitoring:** suspicious activities verification

Applying AI in Financial Services

- Document processing
- Fraud Detection and Prevention
- Customer Service Enhancement
  - AI-Powered Chatbots and Virtual Assistants
  - Automated Fraud Alerts

Applying AI in Financial Services

- Document processing
- Fraud Detection and Prevention
- Customer Service Enhancement
- Personalized Financial Products
  - Dynamic Pricing & Loan Terms
  - Financial Planning Tools

Applying AI in Financial Services

- Document processing
- Fraud Detection and Prevention
- Customer Service Enhancement
- Personalized Financial Products
- Investment Strategies

Case Study – Income Verification in Loan Applications Using AI

Optimizing Loan Application Process through AI-augmented Document Processing

- Income Verification process

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- Significance in loan applications

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- **Problem:** errors, delays, inefficiencies

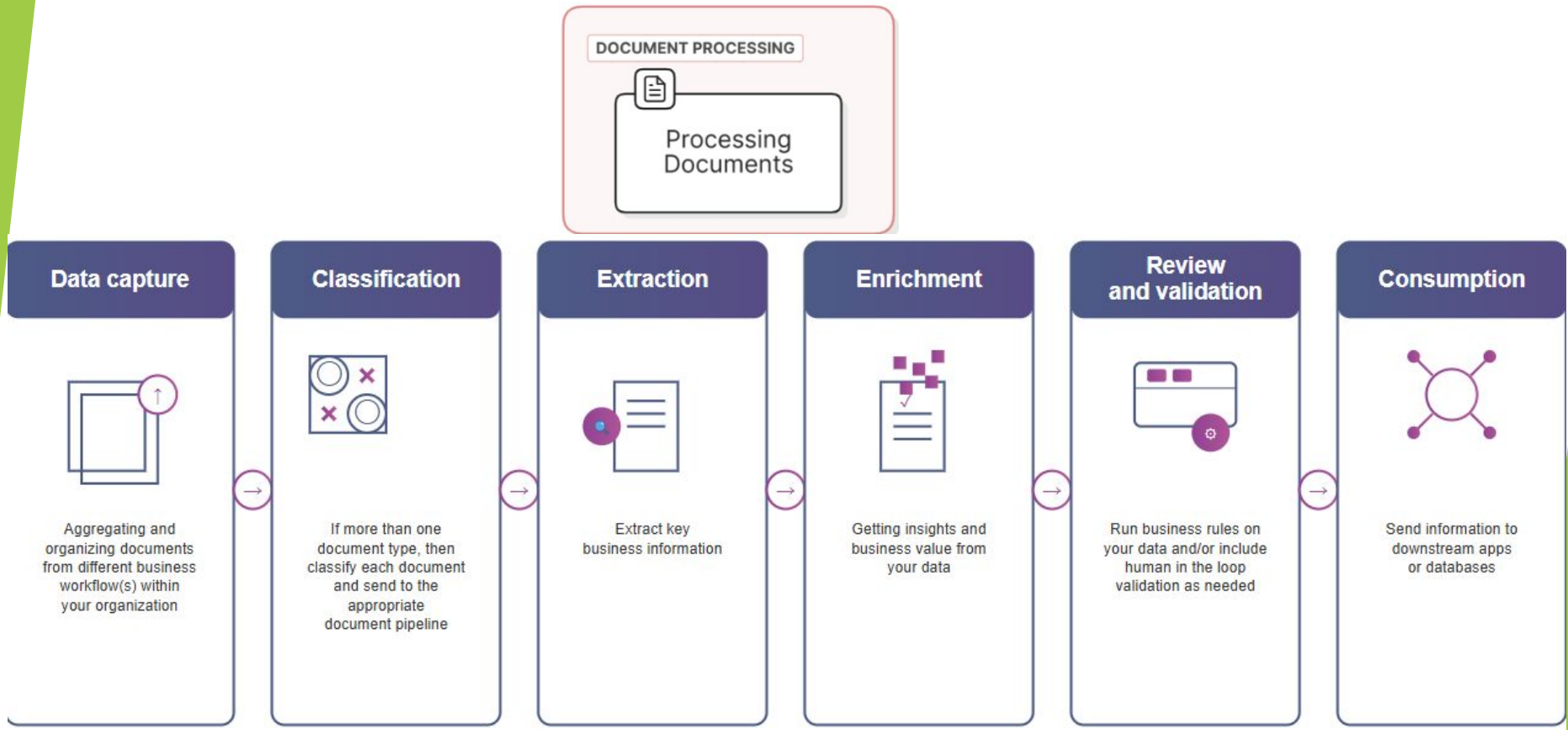
Case Study – Income Verification in Loan Applications Using AI

Optimizing Loan Application Process through AI-augmented Document Processing

- Income Verification process
- Significance in loan applications
- **Problem:** errors, delays, inefficiencies
- **Objective:** Automate income verification through AI-augmented Document Processing

Case Study – Streamlining Income Verification in Loan Applications

Optimizing Loan Application Process through AI-augmented Document Processing



Implementing AI: Strategies for Success

- Best Practices
  - Identifying key problems AI can solve
  - Planning and budgeting for AI integration
  - Choosing the right AI/ML models
  - Utilizing AI/ML SDKs and APIs

Challenges and Considerations

- Navigating Potential Pitfalls
  - Data Privacy and Security Concerns
  - Ethical Implications
  - Regulatory Compliance
  - Managing Organizational Change

Future Outlook

- The Evolving AI Landscape
  - Emerging Trends in AI Applications
  - AI's Role in Future Business Strategies
  - Preparing for Continuous Innovation

Thank You