Business Section

Key takeaway:
Why should CaixaBank embark on this MLOps project?

Client
– CaixaBank – Retail & Commercial Banking Division

Business Unit
- Digital Transformation Unit

What's the maturity of the client
- CaixaBank is a bank with mature infrastructure and OCR tools, but its cheque processing unit still relies on semi-manual data entry processes.
- Data storage is well-organized, but automation strategies are not fully integrated into daily workflows.
- Employees are experienced but manually overloaded, with tools lacking end-to-end ML integration.
- The broader strategy focuses on modernizing operations through AI and automation"

Goal of Project (Objective metric, Improvement over baseline)
– Reduce cheque turnaround time from 4 hours to under 1 hour. Automate numeric field extraction to cut manual processing time by at least 80%, and reduce average processing cost per cheque from $6 to below $2.

– **As measured by (quantifiable KPI)?**
– Average cheque clearance time, Percentage of cheques requiring manual correction, Labor hours per 1,000 cheques, Average cost per cheque.

Problem Statement
– Manual cheque digitization is a bottleneck. Employees spend up to 4 hours per cheque across verification, keying, and processing.
– This leads to high operational cost (average $4–$6 per cheque), approximately 1–3% error rates, and delays in customer funds availability.
– ***Baseline***: 4 hours processing time, $4–$6 per cheque, 1–3% error rate.
– This workload occupies the equivalent capacity of over 25 full-time employees each day, significantly straining operational resources.

Solution Description & Key Functionalities
- We propose a neural network-based digit recognition system, trained on handwritten numeric data and integrated into an MLOps pipeline.
- The system extracts key numerical fields (e.g., amount, account number) from scanned cheque images and feeds structured outputs into CaixaBank's back-office system.

Solution Scalability
– The solution is modular and extendable to other financial workflows such as loan forms, tax documents, and claim processing.
– It can scale by adding support for alphanumeric characters, support letters (alphanumeric), multilingual formats, or mobile cheque deposit use cases

Client Benefit (Over non-AI approach)
- **Short-term:** Cut manual labor by 80%, reduce human error, lower per-cheque processing cost from.
- **Long-term:** Enable digitization across form-heavy departments using the same ML pipeline infrastructure.
- **Competitiveness:** Meet faster SLAs, reduce processing overhead, and increase customer satisfaction.
- **New Opportunities:** Launch remote cheque submission via banking apps with real-time validation.
- ***KPI's:*** Reduced processing cost, time, rejection rate

Cost estimation ($000) (ball park)
– **Talent:**
  – AI specialist: $25K
  – Product Mgr.: $15K
  – ML/SW Engineer: $30K
  – Data Engineer: $25K
  – SME: $25K

– **The Client to cover:**
– Historical cheque scans, infrastructure (on-prem/cloud), licenses for OCR scanner integration.
– **Time**: 12–14 weeks including testing, training, and rollout

Risk and challenges?
– Handwriting variability and poor image quality may reduce model accuracy.
– Cheque layout changes could require retraining.
– Initial skepticism or resistance from operations teams could stifle innovation.

– **Planned Mitigation**: Retraining through active learning and feedback loops, data augmentation, ensemble validation checks, manual override modes.