




Trusted Identity
Product & Solution Provider

AI-powered Trusted Identity Ecosystem



HOW AI technology
can be applied to identity
ecosystem?

AI
can automate identity
management

AI
can learn and
continually improve

AI
can provide better
user experience

KEY BENEFITS OF AI



01

Improving
Accuracy



02

Increasing
Accessibility



03

Reducing Fraud
And Errors



04

Enhancing
Security And
Privacy



05

Enabling
Scalability And
Interoperability



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Key pain points of identity ecosystem in Africa

Identity Registration

Lack of proper infrastructure and resources to efficiently and conveniently enroll identity of citizen

Identity Proofing

Limited availability and accessibility of reliable identity evidence

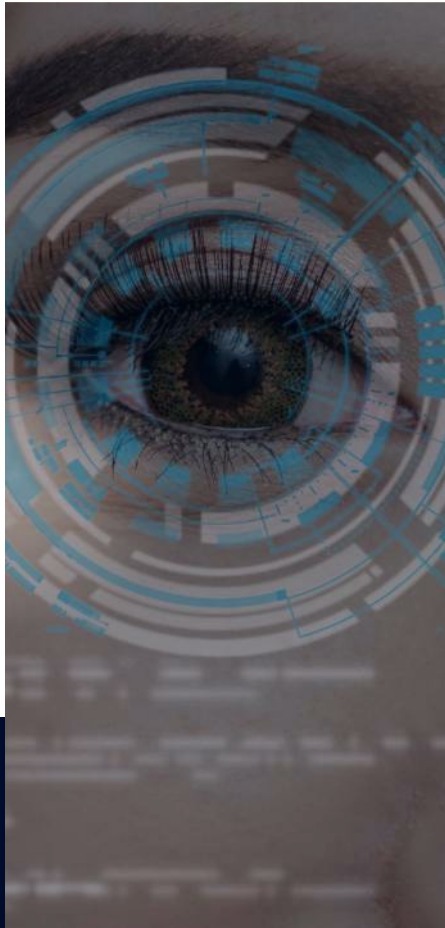
Identity Authentication

Limited use of advanced biometric technologies for identity verification

Identity Management

Lack of robust and efficient systems for identity management

A Trusted Identity Product & Solution Provider



SATISFACTIONS BEYOND SECURITY

Identity Registration

in Trusted Identity Ecosystem



AI-powered Biometric Enrollment

Multimodal Biometric

AI algorithms can be used to support the collection and integration of multiple biometric modalities.

Benefits:

- Overcome that individuals may have physical disabilities that make it difficult to rely on a single biometric modality.
- Become much harder for individuals to impersonate someone else or create fake identities.



AI-powered Biometric Enrollment

Photo Quality Assessment and Enhancement

AI algorithms can analyze and enhance the quality of photo captured to ensure that it meets the necessary standards for registration.



Benefits:

- Overcome the challenge of poor quality photographs due to factors such as poor lighting or limited environment condition.
- Reduce the cost and labour of retaking photos.
- Ensure that the photos meet the necessary standards for registration.
- Improve the efficiency and accuracy of identity registration processes.

- ✓ Detect and correct issues such as blur, lighting, and even intelligently remove messy background.
- ✓ Automatically adjust and deliver the photo with the right size of portrait.



SATISFACTIONS BEYOND SECURITY

Identity Proofing

in Trusted Identity Ecosystem



Reliable Digital Identity in Trusted Identity Ecosystem



EMPCode is a multi-dimensional graphical code consisting of "facial image + biometric features + biographical data". Built upon state-of-the-art cryptographic technology, it serves as a trusted digital ID, providing a high level of security and anti-counterfeiting measures, it can be authenticated offline using intelligent biometric authentication terminals. EMPCode is a sophisticated code system that is extremely difficult to tamper with, while its large capacity makes it enable to store complex personal features for higher security.

Technical Features:

- Dual authentication, digital-authentication and visual-authentication.
- Coding capacity may adjustable under 1000 byte.
- Adopt Reed Solomon algorithm for error correction and tolerance adjustment.
- 4-level error correction options: 7%, 15%, 25%, and 30%.



SATISFACTIONS BEYOND SECURITY

Biometric Authentication

in Trusted Identity Ecosystem





Defending against **DEEPFAKE** with AI-powered Biometric Authentication

Liveness Detection: Ensuring Authenticity

- Use of AI algorithms to analyze biometric data.
- Detecting signs of live human presence.
- Prevention of DEEPFAKE attempts.

With high instances of identity fraud and the prevalence of fake IDs, liveness detection can help prevent such fraudulent activities, improving the security and reliability of identity authentication.



Continuous Biometric Authentication: A Dynamic Approach

- AI algorithms analyze and compare biometric data over time.
- Adapting to changes in appearance or aging.
- Robust defense against evolving DEEPFAKE techniques.

- ✓ Help to maintain trusted digital identities for individuals.
- ✓ Save cost and reduce burden on citizen and governments for repeated registration enrollment.



SATISFACTIONS BEYOND SECURITY

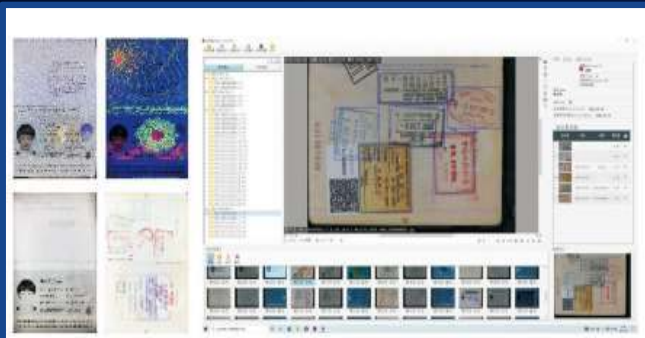
Identity Management

in Trusted Identity Ecosystem



Use Case

How AI can help border management?



■ Risk Assessment

AI can provide risk assessment and alerts based on the analysis of passenger travel data and behavioral patterns, while border officials can conduct in-depth inspections and investigations based on these alerts.

■ Fraud Detection

AI can process a large amount of data and images, it can help on automatic identification and verification of travel documents, while border officials can perform further manual verification and judgement.



Let's imagine, AI is the colleague of border officer

By using AI technology

The border officials will be more focused on data analysis and decision-making, rather than simple manual verification. The inspection process will be more quickly and accurately, thereby improving border security and work efficiency.

Benefits of using AI for **training** instead of relying solely on human border officers:

- **Improve Efficiency**
AI can process and analyze large amounts of data much faster than humans.
- **Ensure Consistency**
AI is not affected by factors such as fatigue, stress, or personal biases, which can impact human inspection result.



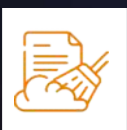
- **Increase Scalability**
As the volume of travelers passing through borders continues to increase, AI-powered systems can be easily scaled up to accommodate this growth.
- **More Cost-effective**
Hiring and training human border officers is costly, however, AI-powered systems are reproducible.



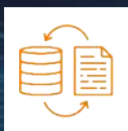
AI Training



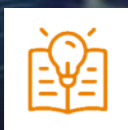
Data collection



Data cleaning



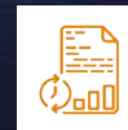
Feature extraction



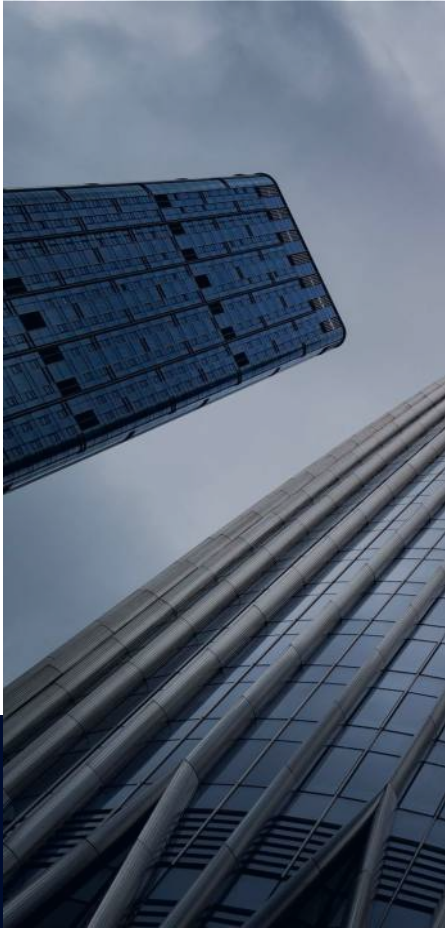
Model training



Model optimization



Real-time updating



SATISFACTIONS BEYOND SECURITY

The Future of Trusted Identity Ecosystem



Was it really Princess Leia?



Next Generation of Trusted Identity Ecosystem

■ Decentralized Identity

Individuals can control over their own identity data and can choose which entities they share it with.

■ Blockchain-based Identity

Provide a secure and tamper-proof means of storing and sharing identity information.

■ AI-powered Identity System

Provide more efficient and secure identity enrollment, authentication, management and more.

Identity Authentication of Digital Human

“virtually” Indistinguishable From Humans



■ Multi-modal analysis

By combining multiple modalities such as voice image and behavior, analyzing the authenticity, naturalness, and emotions of the data.



■ Blockchain technology

Utilizing decentralized blockchain technology to record the identity information of real humans and ensuring the immutability of the information, thus guaranteeing the authenticity of the digital human.



■ Machine learning algorithms

By training machine learning algorithms to establish classification models for real and digital humans.



SATISFACTIONS BEYOND SECURITY

ABOUT EMPTECH



Since 1995

Listed Company:
300546

Customer

Global Government, Agencies,
Enterprise

R&D

Total Employees 800+, R&D 40%,
Patents 300+

Our Key Business Segments

- Secure Identity
- Smart Election
- ePublic Services
- Border Control



Our To-date Implemented Figures



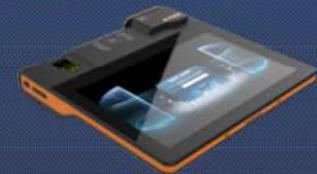
2B+
Identity Documents



2K+
Centralized & Decentralized
Personalization Systems



20K+
Self-service Kiosks



1M+
Smart Terminals

BOOTH H2-02

Looking Forward to Your Visit!



Web: www.emperortech.com

Email: marketing@emperortech.com