VERIFAI.

glossary
terms and
descriptions

Term	Description
Application-Specific Integrated Circuit (ASIC)	Integrated circuit (chip) designed for a very specific use, rather than general-purpose.
Artificial Neural Network (ANN)	Based on collection of connected units (neurons) that are connected and communicate. Neurons + connections have a certain weight that adjusts as learning proceeds. Neurons are aggregated into layers; input -> (several) hidden -> output layer.
Application Programming Interface (API)	Collection of definitions that a computer programme uses to communicate with other programmes or programme parts. Often, APIs form the distinction between different layers of abstraction, this way enabling applications to work in a high level of abstraction (and delegating lower levels to other programmes).
Basic Access Control (BAC)	Mechanism specified to ensure only authorized parties can wirelessly read passport info with an RFID chip. Negotiates a session key using personal data, which is then used to encrypt communication between chip and reading device.
Blocking template	Blocking templates ensure privacy sensitive data is not collected during scanning by literally blocking the information fields that the user is not allowed to obtain. These fields together form templates, that differ per document. Because Verifai recognizes the document, it knows which fields to block within seconds.
Classifier	A classifier is an algorithm that can be applied to a classification problem. It can be either probabilistic and thereby output probabilities for each class, or be discrete and output the most likely class. Verifai entails over 150 discrete classifiers, that together identify the ID type.
Feature extraction	Type of OCR that decomposes glyphs into features, s.a. lines, loops and intersections. This reduces dimensionality and makes recognition computationally efficient. Features are compared to vector-like representation of a character.
Graphics Processing Unit (GPU)	Processor used for video tasks. Takes over tasks from the CPU.
Hardening	Process of securing a system by reducing its surface of vulnerability, for example by removal of unnecessary software, changing default passwords and disabling unnecessary services.

Machine Readable Zone (MRZ)	Zone specialised to be digitally read by using letter type OCR-B. Can be read via OCR of optical techniques such as Swipe, Half-Page or Full-Page.
Near-Field Communication (NFC)	Form of RFID that, in contrast to classic RFID, works in two directions (so tags can both send and receive).
OpenGL	OpenGL is a programme language independent API that is able to generate 2D and 3D vectors. It is typically used to generate hardware-accelerated images by harnessing the GPU, which is the case for our SDK.
Optical Character Recognition (OCR)	Mechanical conversion of images of text into machine-encoded text.
Pattern Matching	Type of OCR where matrices are matched by comparing an image to a stored glyph on a pixel-by-pixel basis. Relies on the input glyph being correctly isolated from the rest of the image.
Radio-frequency Identification (RFID)	Technology to save information from a distance using radio-waves.
Server-Side	Refers to operations that are performed by the server in a client-server relationship in a computer network.
Software Development Kit (SDK)	Set of software development tools that allows the creation of applications for a certain framework or platform. Can take the form of a simple implementation of one or more APIs or a complex hardware-specific tool that can communicate with a particular embedded system (big range of possibilities).
TensorFlow	Open-source software library for dataflow programming. Symbolic math library that provides APIs for Python and C++.
Tesseract	Open-source OCR engine for various systems.
Tensor Processing Unit (TPU)	ASIC (chip) specifically for neural network ML, designed to work with TensorFlow.
Transport Layer Security (TLS1.2)	Encryption-protocol to ensure safe communication between computers. Authenticates serves with asymmetrical certificate (public key). Encrypts communication with symmetrical block-cipher.
Visual Inspection Zone (VIZ)	Field on the passport that contains personal information and photo that can be visually read.