



Customer case

Deciphering doctor's handwriting with deep learning for Zorg & Gezondheid

AGENTSCHAP
ZORG &
GEZONDHEID

The customer



Agentschap Zorg En Gezondheid, a key department of the Flemish government. One of their responsibilities is to register the causes of death of the Flemish people into a digital system. This task is one of the key inputs for statistics and gains insight into the trends of diseases.

Also, it is required prior to cremation or burial services and has important consequences for the family as it obtains insurance, pensions / benefits for the family



The challenge

A death certificate is an official medical document that **contains handwritten notes** by physicians. Yet, the handwriting of doctors is often so bad that it's not possible for a human to decipher every single cause of death. When the officer can't read what's written, he puts a "\$" sign, instead of the accurate cause of death. This **error rate** has consequences for the quality of the electronic death registration. The last 6 years, **6 people** have been digitizing these documents for the Flemish part of Belgium. They read, decipher, interpret and type the handwritten medical terms into a digital application.

Our solution



We built a bot that automatically reads doctor's handwriting on death certificates and created an **AI algorithm** that surpasses the human ability to read bad handwriting.

"We went from a difficult and time-consuming process to an efficient, AI based system which even deciphers bad doctor's handwriting for us!"

Civil workers gain great advantage of the AI that deciphers the doctor's handwriting and suggest what's written before it automatically puts it in the system. They can now focus on **other core tasks** and above all, the error rate of unknown causes is **drastically reduced**.

- Speeding up the process of registration
- Improved the quality of the electronic death registrations by reducing the unknowns
- Lower cost of backlog management and more focus on core jobs

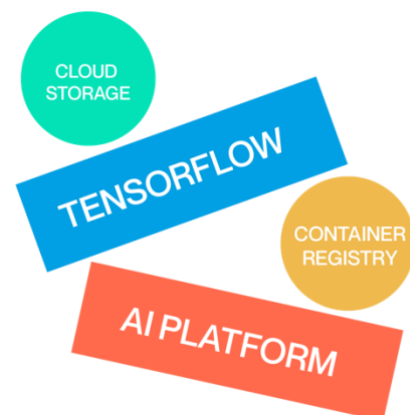


Technologies

Tensorflow to build the neural network to recognize the handwritings: model architecture for classification of images

AI Platform to schedule jobs, train the model and do hyperparameter tuning to optimise the model

Google Storage and Container Registry to share the containerized solutions



Competence Center



Tensr is a brand of Vectr Consulting that focuses on engineering **AI and ML solutions** using Google Cloud Platform. Their expertise lies within **big data engineering** as we predesign data to make magic possible. Machine learning, to craft intelligent solutions generating business value with data models and cloud analytics to leverage the power of the cloud through **analytical insights**.

