

# **Make A Difference Hackathon - ORIOS**

## **Inspiration**

There are close to 65 million refugees in the world in immediate need of food, water, clothing and shelter. They have been forced to flee their homes due to political crisis, war, socio-economic policies of strict regimes etc. And over 1.1 billion people are unable to prove their rightful identities due to lack of proper legislation and upheaval. Getting each of them an official identity so that they can receive social benefits from the government is an uphill task. Refugee organizations are handicapped in their ability to serve so many people due to their limited access to efficient and secure tools for identifying refugees.

## **What it does**

Our app helps refugee organizations efficiently and securely identify refugees who come to refugee camps in search of food and shelter. It helps officers easily take photos of incoming refugees, identify them or enter new user details, check their medical records and documents, note daily movement of refugees across various camps and request resources from nearby camps based on availability of resources. We harness the power of Deep Learning and Blockchain to provide both efficiency and security in the identification process.

## **How we built it**

We used Microsoft's Cognitive Services Toolkit, that uses deep learning based convolutional neural networks, to analyse photos of incoming refugees, and test them against an existing dataset of refugees' facial photos. Based on whether the user is new or already registered, we either retrieve their details from our Tierion blockchain or add their details to the blockchain. We used Golang for the back-end server, and Javascript/HTML/CSS for the front-end client.

## **Challenges we ran into**

We faced issues in trying to effectively retrieve data from our blockchain and querying it against the inbuilt CNN, because of differing protocols for appending and querying refugees for each tool. Deciding the control flow and functionality of the app was also tough given the extremely short time available. Finally, learning to match every task to the right team member's skillset was crucial to make the development experience smooth

## **Accomplishments that we're proud of**

Firstly, the chance to learn how to use Blockchain and Deep Learning in building simple applications was a big highlight. The possibility of creating an integrated system that is not only secure and efficient, but targeted to serve a very downtrodden section of society in a philanthropic way gives us all great satisfaction.

## **What we learned**

We learned to always come prepared to give our best in every hackathon we participate in. We learned several new technologies in such a short span of time, which enthused us to keep

learning more about technologies based on Blockchain, AI, and web development. We finally learned that teamwork makes tough times seem like a lot of fun, while also making us learn faster than when alone.

**What's next for X**

We believe that this system can be deployed at several refugee camps all around the world. Adding speech abilities and improved ways for managing resources among camps is important. Building an easy way to counsel and connect refugees with mentors and financial resources is an important future step for our app.