



LA FONDATION

**14-34 avenue Jean Jaurès
75019 PARIS**

Paris, October 10th 2022

The MSF Foundation is a specialised entity created by Médecins Sans Frontières (MSF) dedicated to medical innovation targeting patients living in contexts with limited resources. Ongoing projects relate, among other things, to the use of 3D printing to create personalised prostheses; the development of digital tools for epidemic control and surveillance; and the development of a smartphone application using Machine Learning to streamline and automate antibiotic susceptibility testing: **Antibiogo**.

The Antibiogo project will contribute to the fight against antibiotic resistance, a major public health concern that is expected to cause 10 million deaths per year by 2050.

Antibiogo is a free, open source, offline Android app, designed for laboratories in Low and Middle Income Countries (LMIC). It supports non-expert laboratory technicians in measuring and interpreting antimicrobial susceptibility tests (AST or Antibiogram), in order to help doctors prescribe appropriate antibiotics to their patients and to provide accurate results that can be used for surveillance purposes.

Winner of the 2019 Google AI Impact Challenge, the application's development started with the help of Google's benevolents.

A first version of Antibiogo that was clinically evaluated across three different sites and countries (Jordan, Mali & Senegal) has been CE-marked since May 2022 as a medical mobile device application used for the interpretation of antibiograms in resource-limited settings and is now being deployed within MSF laboratories.

In parallel, a second version of the app integrating additional features is under development and must be evaluated as well in terms of usability and clinical performances. The results of the studies will be used to obtain CE-marking for this second version of Antibiogo according to the new In-Vitro Diagnostic Medical Devices Regulation (EU).

In this framework, we are looking for a **Computer vision engineer** to join the Antibiogo team on improvement of the image analysis system and its open sourcing:

Core of the system with the expert system (ES), the image analysis is the entry of the whole user journey of Antibiogo. The processing is composed of a first step of image analysis done with OpenCV then a step of machine learning with Tensorflow Lite.

We mainly work on the following technologies: Kotlin, C++, Python, Javascript frameworks (Vue.JS), TypeScript, Google Cloud Platform, Firebase (Firestore, Storage, Crashlytics...), Git.

Computer vision Engineer (Freelance)

Activities

Under the responsibility of the engineering lead of The MSF Foundation, and in collaboration with the rest of our small team, you will be in charge of providing expertise and technical contributions to the image analysis system integrated into the mobile app.

Your main duties will be to :

- Work with the clinical team to translate needs to solutions
- Implement new features in the image analysis system
- Work on tools to automate data validation
- Maintain and improve code quality with tests, CI/CD
- Prepare the image processing source code for open-sourcing (Github)
- Contribute to the technical documentation of the image analysis system
- Participate in regular meetings organised with the AntibioGo project team

Profile

Experience:

- You have 5+ years of experience as a Computer vision Engineer
- You have a comprehensive experience in image processing in C++ with OpenCV
- You are comfortable with Python and have an experience with TensorFlow
- Bonus, if you have an experience in integrating OpenCV and/or Tensorflow in an Android project
- You are comfortable with good development practices such as testing, code reviews, continuous integration, clean code, version management.

Languages:

- Fluent French and English written.

Skills:

- Strong writing and communication for documentation and multidisciplinary teamwork
- Having knowledge and interest in the following topics is a plus (not mandatory): medical devices, humanitarian innovation, limited resource settings.

Start date: mid-november 2022

Conditions:

- Full time contract as a freelance
- Location: Paris or remote
- Duration: 3 months (renewable)

Please send your application (CV and a short introduction) to the following address :
vanessa.lalouelle@paris.msf.org

*Applications are reviewed on an ongoing basis.
We may stop the selection process if a candidate matches the profile we are looking for.*