Data Scientist, automated detection of pulmonary lesions

Employer Profile

The Université Côte d’Azur (UCA) is a Community of Universities and Higher Education Institution (ComUE) created in 2015 with a research mission and consists of 13 members and more than 30,000 students. The UCA unites the University of Nice Sophia Antipolis, public scientific and technological institutions, and other department. A winner of a grant from the French Initiative of Excellence (IDEX) program with its UCA JEDI project, the UCA aims to increase its visibility and national and international stature. The long-term goal is to be counted among the top ten French universities comparable to the best in the world.

The UCA JEDI project is steered by a committee consisting of the President of the UCA and four Program Directors (Education, Research, Innovation and International). The President is supported with UCA JEDI by an executive assistant (DEA), and each Program Director has an Operational Program Director (DOP).

Job description

Lung cancer is the leading cause of death from cancer. Most of the efforts are dedicated to early-stage detection of lesions so that the prognosis for patients with lung cancer can be improved.

Even though no lung cancer screening has been done in France so far, high-risks patients (i.e. heavy smoker with more than 30 packs per-year) are advised to be monitored. The management of the huge volume of images that would be generated in an automated lung screening program is the main obstacle to organize a national, knowing that 40% of radiologists retiring would not be replaced by 2025.

Université Côte d’Azur and hospital university of Nice are the promoters of the project LungScreenCT. The goal of the project is to provide radiologists with a reliable first-reading tool, based on artificial intelligence algorithms, allowing radiologists to manage the huge volume of images generated in an automated lung screening program. Artificial Intelligence would allow radiologist to focus on complex cases and spend more time with patients.
LungScreenCT project is in partnership with a French dynamical and ambitious start-up, well-known for its expertise in Artificial Intelligence applied on mammography. This project benefits from the environment of *Maison de la Modélisation, de la Simulation et des Interactions (MSI)*, bringing scientific and technical skills in modelling and simulation in various scientific fields.

In order to develop this project, *Université Côte d’Azur* wants to recruit a data scientist who is curious about Artificial Intelligence algorithms in medical imaging and looking forward to meeting the daunting challenges associated with the lung cancer.

**Main tasks**

1. Developing and optimizing algorithm to detect automatically pulmonary lesions [1];
2. Statistical analysis on annotated data and optimization of tools to have access to an heterogeneous data set

In order to have a clear insight into the first task, please read the following paper:

**Skills**

- Data scientist (Master degree or Ph.D)
- Mandatory:
  - Python
  - Bash/Shell
  - English speaking
- Substantive knowledge and experience in the following areas:
  - Version Management Software (git)
  - Formats csv, json, text
  - File Transfer Protocol (SFTP,scp…)
- Prior experience with Machine Learning/Deep Learning applied to medical imaging would be appreciated
- Interpersonal skills, well organized, rigorous, autonomous
• Interested in medical imaging (fin a state of the art below)


Location of the position

Sophia Antipolis – Full time

Application

Candidates should send a resume and a cover letter to recrutement@univ-cotedazur.fr and stephanie.lopez@univ-cotedazur.fr. If they have any questions, candidates can contact stephanie.lopez@univ-cotedazur.fr

Short-term contract: 12 months.

Net salary: between 2000 and 2300 € depending on work experiences

Deadline for applications: January 10th, 2020

Starting date: February 15th, 2020