Optical tomography scientist
£30,000 to £60,000, London

Company infomation

Cortirio's mission is to save lives by developing low-cost, portable brain imaging.

Traumatic brain injury (TBI) is the most common cause of death and life-long disability amongst the under 40s. Current brain imaging technology is non-portable and expensive, causing delays to treatment and costing lives. The problem is even more acute in low and middle income countries: two-thirds of the world's population lack access to even basic medical imaging.

Cortirio are developing a portable headband that enables diagnosis at the scene of an injury. Our technology uses infrared light to image blood at high resolution and automatically detect injuries. As we don't use X-ray radiation, scans can be run continuously to alert staff if a patient needs attention, much as a heart rate monitor raises an alarm if someone's heart stops. Our product could save millions of lives lost to head injuries, but the technology behind it could do even more. Our roadmap includes stroke, age-related decline and mental health.

Job summary

The role is to develop optical imaging of intracranial blood. This will involve developing simulations of light propagation, implementing inverse models, developing image reconstruction techniques and creating automated testing suites for validation. Working in a fast, dynamic team, you will work collaboratively and have the opportunity to drive improvements in all aspects of the software and hardware system.

This project offers the chance to have a big impact on a global problem whilst working at the cutting edge of technology. You will work in a small, collaborative team and have a significant role in shaping the development of the product. There are options for flexible and remote working. Stock options will be offered.

Job responsibilities

- Simulate light propagation through scattering media
- Develop and improve upon optical tomography imaging software
- Develop test suites to validate the image reconstruction process
- Improve the software to optimise imaging speeds

Core experience

- Strong mathematical background
- Diffuse optical tomography (or a related technique)
- Inverse problems
- 2+ years of software development
- Python, matlab or R (Python prefered)
- C or C++

Desirable experience

- Optimising software for parallel computing architectures
- High performance computation
- Imaging processing
- GPU development
- Cloud computing and simulation