

Postdoctoral Fellowship

A journey through **machine intelligence** and **brain intelligence**

I am looking for a passionate Postdoctoral Fellow to join my team (www.oliverychen.com). You will journey with us on two adventures. (a) Building **new machine-learning methods** to study the brain, behaviour, and brain diseases. (b) Exploring the relationship between **genes** and **the brain**.

The position is full-time, with compensation at the *Premiers Assistants* level (www.unil.ch/files/live/sites/srh/files/03_Infos_administratives/2023/Assistant_doctorant_2023.pdf). You will have joint affiliations with the **Lausanne University Hospital (CHUV)** and the **University of Lausanne**. We will discuss with and learn from each other.

I. Contexte: What does our group do?

We develop new machine-learning methods and statistical models. We investigate data related to the brain, genes, and behaviour, from healthy individuals and patients.

Our focus is threefold. (a) Building new, exciting **models** to solve real-world problems. (b) Using these models to study the associations between the **brain**, **genes**, and **behaviour**, and when/how they cause **diseases**; identify markers to **diagnose** and **prognose** patients; **predict** disease severity cross-sectionally and longitudinally. (c) Translating our algorithms into affordable **medical devices** and free **health apps**.

II. Mission

- The Postdoctoral Fellow will work on two exciting, interconnected, and interdisciplinary projects.
 1. **Building new machine-learning methods and statistical models**. Linking large-scale brain data with multivariate disease or behavioural outcomes.
 2. **Brain-genomics interface**. Inquiring into the association between genomics and the brain; how they underpin behaviour; how their association potentially gives rise to illnesses.
- You will **collaborate** with colleagues on other projects within and across teams.
- You have **the freedom** to propose and develop **independent studies** within the broader aims of the Team and collaborate with or visit other teams.
- The position, once filled, may start immediately.

III. Nous offrons: What do we offer?

- A **multidisciplinary, multicultural** environment, and a **supportive** team.
- An **annual salary** at the level of *Premiers Assistants* (Salary scale: https://www.unil.ch/files/live/sites/srh/files/03_Infos_administratives/2023/Assistant_doctorant_2023.pdf).
- Joint affiliations with the **Lausanne University Hospital (CHUV)** and the **University of Lausanne**.
- Possibility to collaborate with and visit **external colleagues** at Johns Hopkins University, KU Leuven, the National Institute of Health (NIH), the University of Oxford, the University of Pennsylvania, Vrije Universiteit Brussel, and Yale University.
- We strive for **equality** and **diversity**. We encourage underrepresented individuals to apply.

IV. Profil: What are we looking for?

Minimum qualifications:

- A PhD (or MD/PhD) and an undergraduate degree in disciplines relevant to applied mathematics, computer science, engineering, machine-learning, or (bio)statistics.
- A passion for building new methods and applications and using them to solve real-world problems.
- An enthusiasm for data visualization.
- A team player.
- A strong publication track record.
- The working language of the group is English.

Desired qualifications:

- Strong programming skills in MATLAB, R, and/or Python.
- Experience in machine-learning, statistical modelling, and version control.

V. Contact et envoi de candidature: How to apply?

Please send Professor Oliver Y. Chén (olivery.chen@chuv.ch) the following.

1. A motivation letter (no more than one page).
2. A CV.
3. Three representative publications and a copy of your PhD/MD/DPhil thesis.
4. Contact information for three references.