

**OPEN POSITION**

**MATERIALS CLOUD SOFTWARE ENGINEER/WEB DEVELOPER**

**THEOS, EPFL, SWITZERLAND**

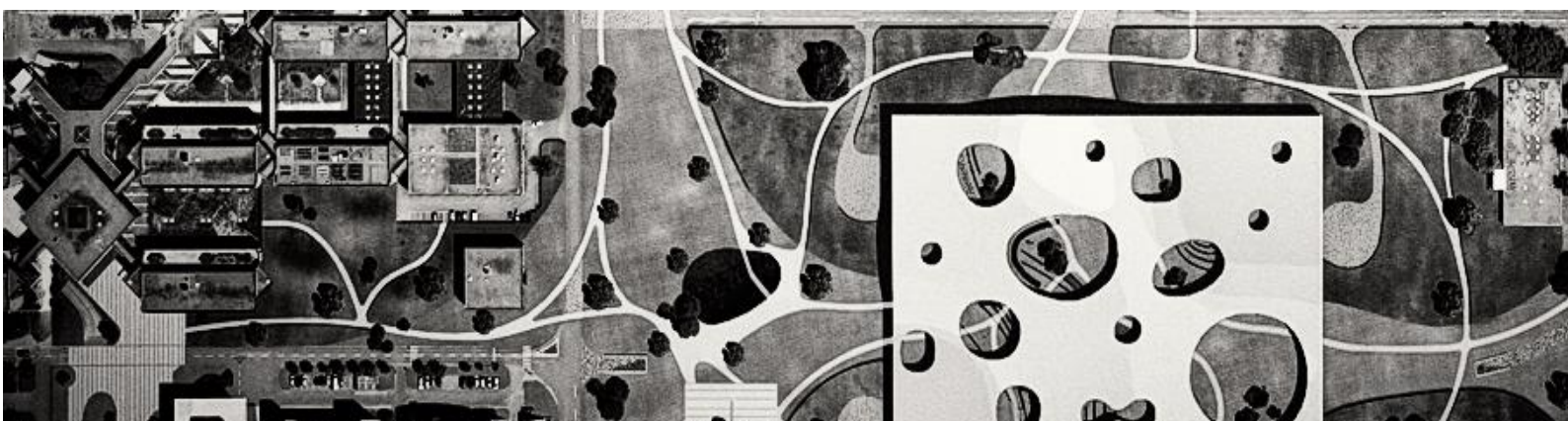
An open position for a software engineer/web developer is available at EPFL (Lausanne, Switzerland) in the MARVEL NCCR (<http://marvel-nccr.ch>), within the Laboratory for Theory and Simulation of Materials (<http://theosrv1.epfl.ch>) at EPFL in Lausanne, Switzerland, under the supervision of Prof. Nicola Marzari and Dr. Giovanni Pizzi.

Outstanding candidates are sought with a **background in the physical sciences, engineering or computer science**. Candidates are expected to show excellent work ethics and to feel at home working in teams. Candidates should have experience in the development of complex web architectures powered by cloud technologies, with the goal to support the development and deployment of the Materials Cloud ([www.materialscloud.org](http://www.materialscloud.org)), a web portal for computational materials science powered by AiiDA ([www.aii-da.net](http://www.aii-da.net)). [AiiDA is a materials' informatics framework that acts as a flexible and scalable infrastructure to manage high-throughput computations; Materials Cloud is a portal for computational materials science and an online cloud platform.]

This job opening provides the opportunity to join an exciting and very driven international team at the forefront of research in the field of materials discovery and design. The candidate will join the scientific group at EPFL, collaborating with groups around the world (at universities, research institutes and companies) where AiiDA, its plugins and the Materials Cloud portal are developed and used to enable the discovery of next-generation materials.

The project will focus on research case studies for the existing Materials Cloud platform, with primary focus on both the portal frontend (currently migrating from AngularJS to React), as well as support for the backend development (Python+Flask). The software engineer would work with a team of 10+ PhD students, postdocs, and software specialists with diverse backgrounds (physicists, chemists, materials scientists and computer scientists) contributing both to AiiDA and the Materials Cloud.

*For interested applicants, scientific research challenges can also be incorporated in the effort (but this is not a requirement).*



### Major duties and responsibilities:

Maintenance and development of the Materials Cloud web portal:

- development and extension of the main web framework for the whole portal, supporting the scientific needs of MARVEL and the other supporting projects;
- development of custom views to present scientific data interactively (e.g. using Three.js/WebGL, d3.js, ...), with data retrieved from the backend REST API;
- continuous deployment and update of the infrastructure on cloud resources using OpenStack, optimization of service scalability and availability;
- communication with users for support, feedback, and strategic development.

Additionally, support further development and extension of the existing python backend that provides the REST API (using the Flask framework) and interacts with large data sets via PostgreSQL and the Swift object store.

The contract is initially for 1 year, as required by EPFL, and renewable yearly up to 4 years upon mutual satisfaction and depending on future funding decisions. Level of employment is 100% on the standard EPFL paygrade (for instance, a gross salary of 83'600 CHF/year for a recently-graduated PhD).

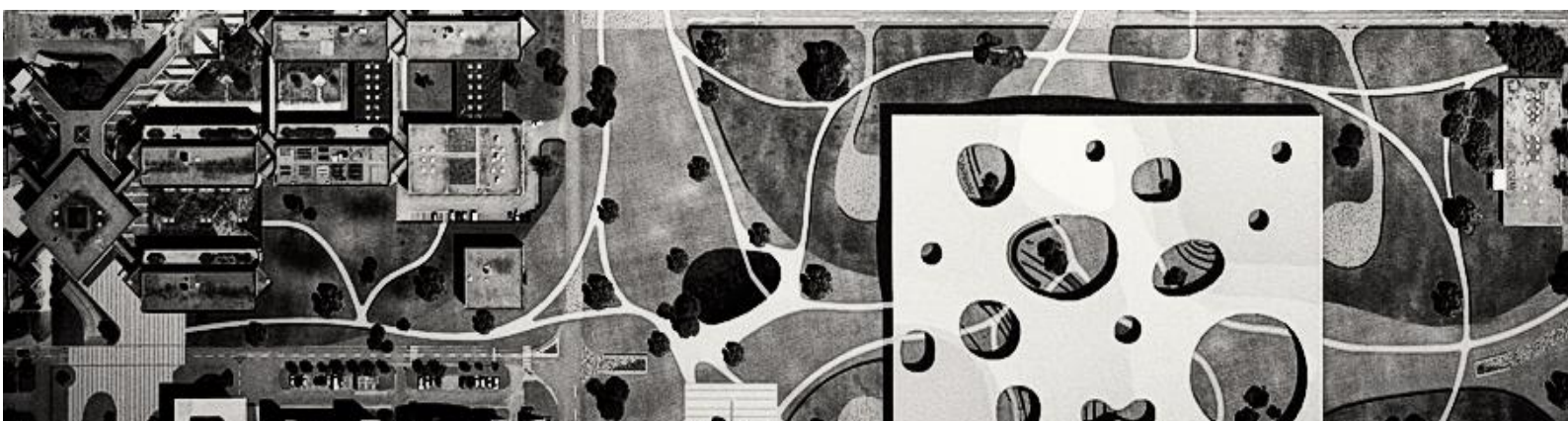
## SELECTION CRITERIA

### Requirements:

- Experience with web frontend technologies (HTML, CSS, JavaScript), web/UI frameworks
- Strong Python programming skills
- Management of large codes/projects in a team (version control systems, issue trackers, unit test, continuous integration and other good software practices)

### Other desirable skills:

- Knowledge of at least one web framework (AngularJS, React, ...) – with a preference for React
- Modern JS visualization and UI libraries (three.js, d3.js, ...)
- Experience with REST API (backend) development
- Experience with Docker and with cloud services – e.g. Amazon AWS, Google Cloud Platform, Microsoft Azure, or OpenStack
- Database systems (MySQL, PostgreSQL or similar)
- Experience with handling large amounts of data



Typical candidates will be independent, motivated and passionate, and have a MSc in computer science or in physical or engineering science, or comparable software development skills and experience.

*A scientific background (e.g. physical or engineering sciences) is welcome but not required. As mentioned, for interested applicants scientific research challenges can be incorporated in the effort – in this case a PhD in science or engineering would be preferable, and the position would have both elements of software engineering and of postdoctoral research.*

## FUNDING AND WORK ENVIRONMENT

The successful candidate will join the group of Nicola Marzari (<http://theosrv1.epfl.ch/>) at the École Polytechnique Fédérale de Lausanne (EPFL), located in Switzerland on the shores of Lake Geneva and in close proximity to the Swiss and French Alps. This multidisciplinary group is at the forefront of development and applications of materials simulations, and leads the pan-Swiss materials consortium MARVEL (<http://nccr-marvel.ch>), a 12-year federal initiative created in 2014 whose aim is to accelerate materials' design and discovery. The group is also leading the work-package on convergence of HPC, high-throughput computing and high-performance data analytics of the H2020 MaX Centre of Excellence (<http://www.max-centre.eu>). The group is also actively involved in several international projects, including the H2020 MarketPlace project (<https://www.the-marketplace-project.eu>), the H2020 Intersect project (<http://intersect-project.eu>), the H2020 BIG MAP project (<http://www.big-map.eu>), the recently funded H2020 OpenModel and DOME 4.0 projects, and the swissuniversities P-5 “Materials Cloud” project (<https://www.materialscloud.org/swissuniversities>), together with further national, industrial, and computational projects. Outstanding computing facilities are available both on-site and at [CSCS](#) (Switzerland) and [CINECA](#) (Italy). This position will be funded by the Open Science Platform of MARVEL, dedicated to the promotion of Open Science and of the technologies that enable it.

## APPLICATIONS

Candidates should submit two PDF documents: 1) a full CV, including contacts for at least two references and 2) a cover letter of intent. The documents should be emailed to [giovanni.pizzi@epfl.ch](mailto:giovanni.pizzi@epfl.ch), [elsa.passaro@epfl.ch](mailto:elsa.passaro@epfl.ch) and [nicola.marzari@epfl.ch](mailto:nicola.marzari@epfl.ch) (simultaneously; not three emails) with the exact text “MARVEL software engineer/web developer position” in the subject line. Shortlisted candidates will be contacted individually for initial interviews over Zoom video conferencing. For best consideration, applications should be submitted by Oct 31<sup>th</sup>, 2021; the positions will remain open until suitable candidates have been found.

