

## Post-Doc F/H

### « Collective Data Portability: Distributed Big Data on Personal Data with Privacy » (PETRUS team, Inria & University of Versailles)

**Status:** Post-Doctoral fellow

**Employer:** Inria Saclay Ile-de-France

**Contract duration:** 2 years

**Starting date:** 1<sup>st</sup> october 2019

**Diploma:** Ph.D. Thesis or equivalent

**Location:** PETRUS team, Bâtiment Buffon, 45 av. Etats-Unis, 78000 Versailles, France.

**PETRUS research:** [PETRUS](#) (PErsonal & TRUSted cloud) is an Inria reasearch team common with University of Versailles, located in Versailles near Paris. The research area of the team is at the crossroads of personal data management, data privacy and security, and is applied to the new Personal Cloud paradigm. This paradigm promises a platform for the analysis of personal data that enforces privacy, such that each individual could bring together his or her personal data and regulate its use and sharing under control. The team's research is organized around four areas: (1) personal cloud architectures based on trusted hardware components (e.g. Intel SGX enclaves), (2) administration models allowing the user to regulate the life cycle of his or her personal data (collection, sharing and collective computations), (3) trustworthy distributed personal data computations respecting privacy, and (4) legal, societal and technological challenges related to the personal cloud.

**GDP-ERE project:** [GDP-ERE](#) is a project founded by [DATAIA](#), the convergence institute in France dedicated to data sciences, artificial intelligence and society. It develops a wider acceptance of the right to data portability set out in the European General Data Protection Regulation (GDPR), in order to allow individuals to collectively contribute to 'Big Data' processing of their personal data with privacy and security guarantees. It especially focuses on the personal agency offered to individuals, from a technical[1,3,4] and legal[2] point of view.

**Assignment:** The post-doctoral fellow's scientific contributions will be part of the PETRUS team's research themes and the GDP-ERE project of the DATAIA Convergence Institute. Interactions with the legal partners of the GDP-ERE project may be considered.

**Special skills and profile:** The post-doc must have both data management skills (e.g. database, big data, machine learning, etc.) and privacy and/or security skills (e.g. access control, differential privacy, security protocols, formal methods, etc.).

**Candidature:** CV, recommendations and cover letter to be sent to [nicolas.anciaux@inria.fr](mailto:nicolas.anciaux@inria.fr)

#### References:

- [1] Anciaux, N., Bonnet, P., Bouganim, L., Nguyen, B., Pucheral, P., Popa, I. S., & Scerri, G. (2019). Personal Data Management Systems: The security and functionality standpoint. *Information Systems*.
- [2] Anciaux, N., & Zolynski, C. (2019) Empowerment and Big Data on personal data : from data portability to personal agency. Dalloz, *Droit et big data* (english version is ongoing).
- [3] Ladjel, R., Anciaux, N., Pucheral, P., & Scerri, G. Trustworthy Distributed Computations on Personal Data Using Trusted Execution Environments. In proceedings of *IEEE Trustcom'19*, 2019. (to appear)
- [4] Loudet, J., Sandu Popa, I., & Bouganim, L. SEP2P: Secure and Efficient P2P Personal Data Processing. In proceedings of *EDBT'19*, 2019.