

# Career

## Post-doc in Real-time Hardware-accelerated Photogrammetry at HES-SO Valais Systems Engineering, joint supervision with EPFL-DHLAB

Digital photogrammetry is a costly operation from a computational resources perspective. In the ScanVan project, we aim at digitizing in real-time a whole city with an embedded system integrated into a vehicle. To achieve this goal with those reduced space and power requirements, a network of FPGAs, CPUs and GPUs will be used to implement new parallel photogrammetry algorithms that produce a 3D point cloud.

### Tasks

The research will center on the creation of a complete parallel digitization pipeline embarked onto a vehicle. This will consist in the electronic design of the platform, the integration of a special camera and the implementation of novel photogrammetry algorithms on FPGA and/or GPU. The candidate must be highly motivated, independent yet able to work closely with our partners at EPFL-DHLAB.

### Requirements

Master degree in computer science or electrical engineering with a strong interest in highperformance implementation of algorithms. Prior experience with FPGA and electronics is required, GPU programming is a strong plus. Fluent spoken and written English, French would be an advantage.

### Context

This research will take place within the DATA research group. Part of the University of Applied Sciences Western Switzerland (HES-SO Valais-Wallis) in Sion, the group is active in data processing techniques, electronics and high-performance computing. Topics of interest include acquisition and processing of data under limited resources. The position will be funded by the Swiss National Science foundation.

### Contract detail

- 36 months
- Flexible employment percentage
- Starting date: April 2017
- Salary according to the HES-SO Valais standards
- Work location is Sion, Switzerland, among the beautiful swiss Alps.

Interested candidates should email a CV and a brief statement describing how their research interests and competences relate to the position and arrange two letters of recommendation to Prof. Pierre-André Mudry (mui@hevs.ch) where further information on the position may be obtained. Evaluation of candidates will begin on Feb. 15th 2017 and continue until the position is filled.