Postdoc in human body shape modeling in sports activities

The Laboratory of Biomechanics and Impact Mechanics (LBMC UMR_T9406, https://lbmc.univ-gustave-eiffel.fr/) is a joint research unit of University Gustave Eiffel and University Claude Bernard Lyon 1. The LBMC gathers more than 40 permanent members having complementary skills in biomechanics, structural mechanics, anatomy and surgery, ergonomics. The LBMC conducts research on two application fields: facilitating travel and maintaining good health. The LBMC has strong expertise in human body modeling for various applications. The LBMC is a member of LabEx PRIMES and IMU and co-directs the International Associated Laboratory named EVASYM between Lyon and Montreal.

DECATHLON SportsLab is the research center of Decathlon dedicated to the development of knowledge about the human body. It is made up of a team of 40 researchers and engineers specializing in the human/product interaction. Since 2019, the LBMC and DECATHLON SportsLab, carry out joint research and development (R&D) activities to develop tools for modeling the human body in order to facilitate the design of sports products better fit to customers.

As part of a new collaborative project supported by the "France Relance" funding plan, we are recruiting a post-doctoral fellow for a period of 24 months. The objective of the project is to investigate the human body shape change in motion during the practice of sport activities and to develop digital tools both for assistance in the design of sport products and for services to support sport practices.

The future employee will work mainly on data collection and the development of statistical shape models of the body in motion for industrial applications. The activities carried out by the employee will be:

- Work with the R&D team of the industrial partner DECATHLON to better understand its needs,
- Plan and coordinate the data collection campaign,
- Collect and process data with the development of specific tools in Matlab or Python
- Build statistical body shape models,
- Apply the models developed to applications identified by DECATHLON
- Communicate regularly with the persons involved in the project the progress of the project
- Write and present scientific articles

The candidate should have good skills in digital modeling of the human body. With a background in biomechanics, robotics or computer science (or any other relevant discipline), he / she will preferably have experience in the processing of 3D scans, and / or statistical shape modeling. Scientific communication skills will also be appreciated. The possibility of joining DECATHLON SportsLab is envisaged at the end of this project.

The candidate will work both at the LBMC site in Bron (69, France) and at the DECATHLON SportsLab (Lille). Travels for data collecting in other places (Rhones-Alpes region) are to be expected.

The salary and benefits associated with the position are defined by University Gustave Eiffel.

To apply, please send your cover letter, CV and contact information of your referee to Pr. Xuguang Wang by email: xuguang.wang@univ-eiffel.fr

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