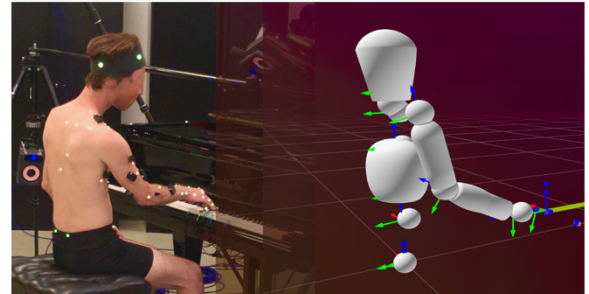


Postdoctoral Researcher Opening Laboratory of Simulation and Movement Modelling, University of Montreal (Montreal, Canada)

Context

We are recruiting a **postdoctoral researcher** for a **12-month contract** at the Laboratory of Simulation and Movement Modelling at the School of Kinesiology and Exercise Sciences, Faculty of Medicine, University of Montréal. The proposed project aims to develop optimal piano performance gestures through multiphysics predictive simulation (pianist→piano→sound), offering innovative solutions to reduce the risk of musculoskeletal disorders. Specifically, the research will focus on: (1) integrating a complex biomechanical-acoustic model of the pianist→piano→sound chain, accounting for fatigue parameters, and (2) simulating repetitive piano performance tasks using our [bioptim](#) tool (optimal control framework for biomechanics through indirect approaches) to anticipate biomechanical adaptations related to fatigue.



Contract Conditions

- Expected start date: **May 2025** (or as soon as possible)
- Work location: **Laboratory of Simulation and Movement Modelling**, University of Montreal (Laval campus), 1700 Rue Jacques-Tétreault, Laval, QC H7N 0A5
- Salary: **CAD \$40,000/year** (plus [benefits](#)).
- Supervisors: Drs. Felipe Verdugo and Mickaël Begon

Qualifications

- PhD degree in one of the following disciplines: computational biomechanics, mechanical engineering, or a related field.
- Strong academic record
- Advanced skills in programming (Python) and non-linear optimization. Expertise in optimal control is a strong asset.
- Experience in collecting and analyzing quantitative biomechanical data
- Strong organizational skills, attention to detail, and autonomy

Application Procedure

Interested candidates are invited to submit the following documents at this [online form](#):

1. A cover letter (maximum 2 pages) detailing their research interests, achievements, and career aspirations.
2. A curriculum vitae (including scholarships, awards, publications, and conferences).
3. Official transcripts of university studies.