

# Stanford

---



## Nicos Haralabidis

Postdoctoral Scholar, Bioengineering

### Bio

---

#### BIO

My research interests lie within both sports and clinical biomechanics applications. I rely upon merging conventional biomechanical in vivo measurements together with state-of-the-art musculoskeletal modeling and optimal control simulation approaches. The integrative approach I take enables me to understand how an individual may run faster, jump further, walk following surgery or intervention, and simultaneously estimate internal body dynamics noninvasively. As a Postdoctoral Research Scholar within the Wu Tsai Human Performance Alliance I aim to explore how stochastic optimal control and reinforcement learning methods can be applied to further our understanding of sporting performance.

#### INSTITUTE AFFILIATIONS

- Member, Wu Tsai Human Performance Alliance

#### HONORS AND AWARDS

- Estimating spinal loads from IMUs using direct collocation - Advanced OpenSim Workshop Travel Award, Stanford University (March 2020)
- Future Research Leaders - Internationalisation Funding Scheme, University of Bath and Polytechnic University of Catalonia (April 2019)

#### PROFESSIONAL EDUCATION

- Master of Science, Loughborough University (2015)
- Bachelor of Science, Manchester Metropolitan Univ (2014)
- Doctor of Philosophy, University of Bath (2021)
- Ph.D., University of Bath , Biomechanics (2021)
- M.S., Loughborough University , Biomechanics (2015)
- B.S., Manchester Metropolitan University , Exercise and Sport Science (2014)

#### STANFORD ADVISORS

- Scott Delp, Postdoctoral Faculty Sponsor

### Publications

---

#### PUBLICATIONS

- **Modifications to the net knee moments lead to the greatest improvements in accelerative sprinting performance: a predictive simulation study.** *Scientific reports*  
Haralabidis, N., Colyer, S. L., Serranoli, G., Salo, A. I., Cazzola, D.  
2022; 12 (1): 15908

- **Three-dimensional data-tracking simulations of sprinting using a direct collocation optimal control approach** *PEERJ*  
Haralabidis, N., Serranoli, G., Colyer, S., Bezodis, I., Salo, A., Cazzola, D.  
2021; 9: e10975
  
- **Fusing Accelerometry with Videography to Monitor the Effect of Fatigue on Punching Performance in Elite Boxers** *SENSORS*  
Haralabidis, N., Saxby, D., Pizzolato, C., Needham, L., Cazzola, D., Minahan, C.  
2020; 20 (20)
  
- **Mechanical and morphological determinants of peak power output in elite cyclists** *SCANDINAVIAN JOURNAL OF MEDICINE & SCIENCE IN SPORTS*  
Kordi, M., Folland, J., Goodall, S., Haralabidis, N., Maden-Wilkinson, T., Patel, T., Leeder, J., Barratt, P., Howatson, G.  
2020; 30 (2): 227-237
  
- **Reliability and validity of depth camera 3D scanning to determine thigh volume** *JOURNAL OF SPORTS SCIENCES*  
Kordi, M., Haralabidis, N., Huby, M., Barratt, P. R., Howatson, G., Wheat, J.  
2019; 37 (1): 36-41