# CURRICULUM VITAE


**Address**

Human Performance Laboratory
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**Google Scholar**

https://scholar.google.ca/citations?user=Wf-xNS0AAAAJ&hl=en


## EDUCATION

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| Doctor of Philosophy | University of Calgary, Calgary, Canada<br>Department of Kinesiology<br>Concentration: Biomechanics<br>Graduation: Dec. 2021<br>Thesis: Repeated bout effect and musculoskeletal loading during prolonged downhill running<br>Advisors: W. Brent Edwards, PhD., Guillaume.Y. Millet, PhD. |
| Master of Science | University of Tabriz, Tabriz, Iran<br>Department of Mechanical Engineering<br>Concentration: Applied Design<br>Graduation: Dec. 2014<br>Thesis: Vibration analysis of human soft tissue for fatigue detection and optimum design of footwear during running<br>Advisors: Reza Hassannejad, PhD, Mir Mohammad Ettefagh, PhD, Vahid Sari-sarraf, PhD. |
| Bachelor of Science | University of Tabriz, Tabriz, Iran<br>Department of Mechanical Engineering<br>Concentration: Solid Design<br>Graduation: Feb. 2012<br>Capstone Project: Modeling and control of a car suspension system based on 11 DOF vibration model.<br>Advisors: Bashir Behjat Khajeh, PhD. |

## PROFESSIONAL EXPERIENCE

**Employment/Appointments**

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| Feb 2022 - continued | **Post-doctoral Associate**, University of Calgary & BIOMECHANIGG Sport & Health Research. Calgary, Canada.<br>**Projects:** understanding the effect of hockey equipment on player's motion |
| Mar 2016 - Mar 2017 | **Researcher,** Biomechanics Lab, Sports Science Research Institute, Tehran, Iran.<br>**Project:** Effects of shoe stiffness and damping on biomechanics of walking |
| Mar 2016 - Sept 2016 | **Research Assistant,** Biomechanics Lab, Faculty of Rehabilitation, Tabriz University of Medical Science, Tabriz, Iran.<br>**Project:** Analysis of lower extremities muscle vibration and muscle activity during an exhaustive treadmill run |
| Feb 2016 - Mar 2017 | **Research & Development Engineer,** Research and Development department of Azar Motor Mobin Co., Tehran, Iran.<br>**Project:** Design, development and implementation of column-type electric power steering system on a class B car (TIBA). |

**Teaching**

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| Sept 2021- Dec 2021 | **Teaching Assistant,** Faculty of Biomedical Engineering, University of Calgary, Calgary, Canada.<br>Course: Mechanics I (BMEN 381) |
| Jan 2020 – April 2020 | **Teaching Assistant,** Faculty of Kinesiology, University of Calgary, Calgary, Canada.<br>Course: Quantitative Biomechanics (KNES 263) |
| Sept 2018 – Dec 2018 | **Teaching Assistant,** Faculty of Kinesiology, University of Calgary, Calgary, Canada.<br>Course: Statistical Methods in Kinesiology (KNES 609) |
| Mar 2016 - Mar 2016 | **Instructor,** Faradars Institute, Tehran, Iran.<br>Course: An online course on Adaptive Signal Processing (EMD Based Method) |
| Sept 2013 – June 2014 | **Teaching Assistant,** Faculty of Mechanical Engineering, University of Tabriz, Tabriz, Iran<br>Course: Engineering Dynamics |

## AWARDS & HONORS

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| **2021** | **Kinesiology Leadership Scholarship,** Faculty of Kinesiology, University of Calgary, Canada, Jan. 2021 – Apr. 2021. |
| **2020** | **Alberta Graduate Excellence Scholarship (AGES) - International,** Faculty of Graduate Studies, University of Calgary. Canada, Sept. 2020, Aug. 2021. |
| **2020** | **TENET Medical Engineering Graduate Scholarship,** Faculty of Graduate Studies, University of Calgary. Canada, Sept. 2020, April. 2021. Offered but declined. |
| **2019** | **Faculty of Kinesiology Presentation Award,** Faculty of Kinesiology, University of Calgary, Canada, May. 2019. |
| **2017** | **Faculty of Kinesiology Dean's Doctoral Studentship,** Faculty of Kinesiology, University of Calgary, Canada, Jan. 2017- Aug. 2020. |
| **2015** | **Best Student Thesis Award** in the field of acoustics and vibrations, Iranian Society of Acoustics and Vibration (ISAV), November 2015. |
| **2012** | **Governmental Full Tuition Waving Fellowship for Master of Science,** Sept. 2012- Dec. 2014. |
| **2012** | **Ranked in the top 2%** of the master's degree participants in the national university entrance examination (Konkoor), Iran, 2012. |
| **2008** | **Governmental Full Tuition Waving Fellowship for Bachelor of Science,** Feb. 2008- Feb. 2012. |
| **2007** | **Ranked in the top 1%** of the bachelor's degree participants in the national university entrance examination (Konkoor), Iran, 2007. |

# SCHOLARLY ACTIVTIES

**Peer Reviewed Journal Articles**

1. **A. Khassetarash**, I. Haider, M. Baggaley, W.B. Edwards, 2022, Effects of prolonged downhill running on tibial strains: a finite element analysis. Journal of Biomechanical Engineering. https://doi.org/10.1115/1.4055756
2. J. Zhang, **A. Khassetarash**, G.Y. Millet, S.J. Aboodarda, Neuromuscular fatigue associated with different pacing strategies during an ultra-endurance pull-up task: a case study. International Journal of Exercise Science. https://digitalcommons.wku.edu/ijes/vol15/iss3/20

3. O.L. Bruce, M. Baggaley, **A. Khassetarash**, I. Haider, W.B. Edwards, Tibial-fibular geometry and density variations associated with elevated bone strain and sex disparities in young active adults, 2022, ***Bone***, DOI: https://doi.org/10.1016/j.bone.2022.116443

4. **A. Khassetarash**, G. Vernillo, M. Baggaley, G.Y. Millet, W.B. Edwards, 2022, The repeated bout effect influences lower-extremity biomechanics during prolonged downhill running, ***European Journal of Sports Science***, DOI: https://doi.org/10.1080/17461391.2022.2048083

5. **A. Khassetarash**, G. Vernillo, R.L. Kruger, W.B. Edwards, G.Y. Millet, Neuromuscular, biomechanical, and energetics adjustments following repeated bouts of downhill running. 2021, ***Journal of Sport and Health Science*****,** DOI: https://doi.org/10.1016/j.jshs.2021.06.001

6. G. Vernillo, J. Temesi, **A. Khassetarash**, G.Y. Millet, 2020, Use of transcranial magnetic stimulation to assess relaxation rates in unfatigued and fatigued knee-extensor muscles, 2021, ***Experimental Brain Research*****,** 239, 205-216.

7. **A. Khassetarash**, G. Vernillo, A. Martinez, M. Baggaley, M. Giandolini, N. Horvais, G.Y. Millet, W.B. Edwards, Biomechanics of graded running: Part II- Joint kinematics and kinetics, 2020, ***Scandinavian Journal of Medicine & Science in Sports***, 30: 1642-1654.

8. G. Vernillo, A. Martinez, M. Baggaley, **A. Khassetarash**, M. Giandolini, N. Horvais, G.Y. Millet, W.B. Edwards, Biomechanics of graded running: Part I- stride parameters, external forces, muscle activations 2020, ***Scandinavian Journal of Medicine & Science in Sports***, 30: 1632-1641.

9. **A. Khassetarash**, R. Hassannejad. M.M. Ettefagh, M.A .Eteraf-Oskuei, Vibration settling time of the gastrocnemius remains constant during an exhaustive run in rear foot strike runners, 2019, ***Journal of Biomechanics,*** 93: 140-146.

10. **A. Khassetarash**, R. Hassannejad., Energy dissipation caused by fatigue crack in beam-like cracked structures. 2016, ***Journal of Sound and vibration*****,** 363C: 247-257.

11. **A. Khassetarash**, R. Hassannejad. M.M. Ettefagh, V.Sari-Sarraf., Fatigue and soft tissue vibration during prolonged running, 2015, ***Human Movement Science,*** 44: 157-167.

12. **A. Khassetarash**, R. Hassannejad. Towards optimal design of sport footwear based on muscle activity and minimum loading rate using simplified model. 2015, ***Journal of Engineering in Medicine***, 229(8): 537-548.

13. **A. Khassetarash**, R. Hassannejad, H. Enders, M.M. Ettefagh., Damping and energy dissipation in soft tissue vibrations during running, 2015, ***Journal of Biomechanics*****,** 48(2): 204-209.

14. **A. Khassetarash**, R. Hassannejad, The role of fatigue on optimal design of sport footwear, 2015, ***Modares Mechanical Engineering***, 14(14): 167-176. (In Persian)

**Peer Reviewed Conference Papers & Abstract**

1. **A. Khassetarash**, G. Vernillo, M. Baggaley, N. Horvais, G.Y. Millet, W. B.Edwards, Lower-extremity Joint Quasi-stiffness in Graded Running, oral presentation in **ISB 2019**, Calgary.

2. **A. Khassetarash**, A. Sharinezhad, M.M. Ettefagh, R. Hassannejad, N. Hedayatpour, The Effects of Shoe Stiffness and Damping on the Gastrocnemius vibration during walking, oral presentation in ***10th International Congress on Sports Sciences***, 2017, Tehran, Iran.

3. **A. Khassetarash,** R. Hassannejad, The effect of crack damping on instantaneous frequency of cracked beam-like structures, poster presentation in ***5th International Conference on Acoustics and Vibration***, 2015, Tehran, Iran.

4. **A. Khassetarash**, R. Hassannejad, Application of continuous wavelet transform to crack detection in cantilever beam based on increase in damping coefficient. Oral presentation in ***4th International Conference on Acoustics and Vibration***, 2014, Tehran, Iran. (In Persian)

## RESEARCH INTERESTS

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| **Biomechanics of Graded Running** | Kinematic and kinetics of graded running in comparison to level running.<br>Musculoskeletal loading during prolonged graded running. |
| **Footwear Biomechanics** | Optimizing footwear characteristics to enhance performance and reduce sport related injuries. |
| **Neuromuscular Fatigue** | Effects of neuromuscular fatigue and muscle damage during prolonged run on running biomechanics and musculoskeletal loading. |
| **Musculoskeletal Modeling & Finite Element Analysis** | Investigating the effects of different running conditions (grade, speed, fatigue) and different running patterns on tissue-level loading. |

## REFEREE FOR JOURNAL PAPERS

Gate & Posture, European Journal of Sport Science, Medicine and Science in Sport and Exercise, Journal of sport and Health Science, Sports Biomechanics, Footwear Science, Plus One

## COMPUTER SKILLS

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| **Programming Language** | **MATLAB,** Professional coding for time series analyses, optimization, signal processing, and use of visual toolboxes.<br>**Python,** Familiar with time-series analyses. |
| **Modeling Software** | **Mimics,** Experienced in bone CT image segmentation and material assignment for finite element analysis purposes.<br>**Vicon Nexus,** Professional use of 3D kinematic recording and tracking. |

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| | **XSENS MVN**, Professional use of 3D kinematic recording and analysis. |
| **Finite Element Analysis** | **Abaqus,** Professional analysis of boundary condition PDEs for stress-strain analysis. |
| **Statistical Analysis & presentation** | **Excel,** Professional use of statistical tests and graphing.<br>**SPSS,** Professional use of statistical tests.<br>**Power point,** Professional presentation of data. |

## LANGUAGE PROFICIENCY

**English:** Fluent

**Farsi:** Native

**Azerbaijani:** Native