

Andre Alvarez

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Biomechanist and data scientist. Interested in studying the interplay between technical metrics and physical characteristics in human movement and performance. Skilled in data integration, exploratory research, statistical modeling and analyzing complex interactions within large datasets.

Education

Boston University Boston, MA
Ph.D. in Rehabilitation Sciences May 2025
Dissertation: What Moves Us – Studies of Propulsion Measurement in Post-stroke Walking
Committee: Cara Lewis (Chair), Louis Awad, Elliot Saltzman

University of Miami Coral Gables, FL
Master of Science in Biomedical Engineering May 2017
Thesis: Validation of Microsoft Kinect for Use in Detecting Balance Impairment in ACL Repaired Patients
Committee: Shihab Asfour (co-chair), Alicia Jackson (co-chair), Asbishek Prasad, Francesco Travascio

University of Miami Coral Gables, FL
Bachelor of Science in Biomedical Engineering May 2014
Senior Design Project: Design of a cell phone based diagnostic and biofeedback device for balance training and the prevention of falls
Advisor: Suhrud Rajguru

Research

Neuromotor Recovery Laboratory, Boston University Boston, MA
Doctoral Researcher (advisor: Louis Awad) 2017 – 2025
Focus: Bipedal walking biomechanics, wearable sensors, statistical and machine learning

Musculoskeletal Biomechanics Laboratory, University of Miami Coral Gables, FL
Master's Researcher (advisor: Francesco Travascio)
Focus: Motion analysis, balance biomechanics, technological integration

Publications and Presentations

Revi, D.A., **Alvarez, A.M.**, Walsh, C.J., De Rossi, S.M.M., Awad, L.N. (2020). Indirect measurement of anterior-posterior ground reaction forces using a minimal set of wearable inertial sensors: from healthy to hemiparetic walking. *Journal of NeuroEngineering and Rehabilitation*, 17, 82.

Alvarez, A.M., Collimore, A.N., Aiello, A.J.M, Binder-Macelod, S.A., & Awad, L.A. (2020). Propulsion timing affects the relationship between paretic propulsion and long-distance walking function after stroke [Poster]. *Annual Meeting of the American Society of Biomechanics*.

Revi, D.A., **Alvarez, A.M.**, Ribeirinha-Braga, L., Walsh, C.J., De Rossi, S.M.M., Awad, L.N. (2020). Beyond walking distance: Evaluating propulsion function during the 6-minute walk test with wearable inertial sensors [Poster]. *Annual Meeting of the American Society of Biomechanics*.

Paskewitz, J.S., **Alvarez, A.M.**, Binder-Macelod, S.A., & Awad, L.A. (2019). Identifying paretic propulsion and ground clearance impairments after stroke through the combined assessment of walking speed and specific functional gait assessment items [Poster]. *Combined Sections Meeting of the American Physical Therapy Association*.

Skills & Languages

MATLAB, Python, R, Julia, Latex, Vicon, Qualisys, Visual 3D, Microsoft Office, Linux

English (native), Spanish (conversational)

- Transcripts and references available upon request -