Duncan **T. Tulimieri, PhD**

Quantitative Developer & Data Scientist

Chicago, IL

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Experience

New Age Alpha

New York | Remote

Quantitative Developer — *February 2023 - Present*

- Reducing operational expenses by leading front-end and back-end teams with the goal of moving a system from MATLAB to Python
- Reduced algorithm run time by 60.22% to improve user experience through refactorization with MATLAB
- Wrote custom investment strategies to optimize both run time and flexibility
- Lead weekly team updates and priority reviews to maximum efficiency across teams
- Worked to expand team by reviewing and performing technical interviews for 5 potential team members

ReproRehab [NIH-funded R25]

University of Southern California | Remote

Teaching Assistant - Data Science — *October 2022 - Present*

- Upskill rehabilitation researchers data science techniques through weekly meetings and project assistance with Python, MATLAB, and git
- Encourage 1-on-1 help by hosting weekly office hours for troubleshooting Python, MATLAB, and git

KINARM

BKIN Technologies | Remote

Teaching Assistant - Robotics — *May 2020 - May 2022*

- Educated neuroscience researchers and promoted research autonomy by teaching robotic programming skills (MATLAB, Simulink, Stateflow)

Education

University of Delaware

Newark, DE

Doctorate in Neuromechanics — *June 2019 - May 2024*

- Course work included, but not limited to: machine learning, neuromechanics, computational neuroscience, statistics, and data science

Denison University

Granville, OH

Health, Exercise, and Sports Studies & Biology — *August 2015 - May 2019*

- Department Fellow, Undergraduate Researcher, Tutor and Teaching Assistant, Strength and Conditioning Intern (Prentiss Hockey Performance)

Research Experience

University of Delaware

Newark, DE

Doctoral Student — *August 2019 - May 2024*

- Brought 5 experiments from idea to dissemination (develop idea and methodology, collect and analyze data, and present findings)
- Programmed 4 robotic tasks for KINARM Exoskeleton (using MATLAB and Simulink), 75% of which are used in continuing research
- Analyzed robotic experimental data by writing custom analysis scripts in MATLAB and Python
- Mentored 3 doctoral students and 3 undergraduate students to maximize learned content and conceptual/theoretical understanding
- Communicate findings by presenting at various conferences via podium talks and posters
- Collaborate with therapists (physical and occupational) and engineers to optimize projects

Denison University

Granville, OH

Undergraduate student — *August 2015 - May 2019*

- Designed, deployed, and analyzed survey using Qualtrics resulting in a publication to support Athletic Trainers' scope of practice expansion

Projects

2024	**Assessing and Training of Proprioception for Individuals With Chronic Stroke**
2023	**Determining exercise dose for individuals with stroke via machine learning models**
2023	**Automated jump-landing scoring of markerless motion capture data for researchers and clinicians**
2021	**Development of a maze generation algorithm to be used as sensorimotor assessment**
2022	**Prediction of forest cover type on open-source data set with machine learning models**
2019	**Assessing the effect of speed and distance on kinesthetic matching in individuals with chronic stroke**
2023	**The perception of speed in the arms via psychophysical methods for individuals with chronic stroke**
2020	**Position matching with arms and eye movements for individuals with chronic stroke**
2023	**Robust optimization of minimum number of trials needed for experimental protocols**
2022	**Proprioceptive training for individuals with chronic stroke via robotic-joystick integration**

Technical Skills

Python | Object-Oriented Programming | Functional Programming | Test-Driven Development | git | Class-based Unit-Testing | SQL | MATLAB | Data Analysis | Data Visualization | Statistical Modeling | Non-Parametric Statistics | Style | Microsoft Office | LaTeX | Simulink Real-Time | Stateflow | C