Duncan **T. Tulimieri**

DATA SCIENTIST | STATISTICAL PROGRAMMER | SOFTWARE DEVELOPER | PHD CANDIDATE, SENSORIMOTOR CONTROL AND ROBOTIC REHABILITATION LABORATORY

100 Discovery Blvd, Tower at STAR, Rm 234, University of Delaware, Newark, DE 19713

☐ (860) 463-2849 | ✉ tulimid@udel.edu | ⊕ tulimid1.github.io | ⬡ tulimid1 | 🔗 duncan-tulimieri | 🎓 Duncan Tulimieri | 💼 Freelance

Industry Experience

New Age Alpha (FinTech Startup)   *UpWork*

DATA SCIENTIST, SOFTWARE DEVELOPER   *February 2023 - Present*

- Optimized MATLAB algorithms' (~14,516 lines) run time by 60.22% to ensure proper refactorization and a better user experience
- Reviewed candidate material and performed technical interview for 5 potential team members
- Leading rewrite of 9 MATLAB algorithms to Python using class-based unit testing to ensure proper refactorization
- Utilize custom conda environment, git for version control, SQL database, and Azure DevOps
- Provide weekly updates and priority reviews to ensure team is organized and goals are understood

ReproRehab   *University of Southern California*

TEACHING ASSISTANT   *October 2022 - Present*

- Teach data science skills to rehabilitation researchers ranging in expertise from beginners to advanced to further open science
- Host weekly office hours for troubleshooting MATLAB, Python, and git

KINARM   *BKIN Technologies*

TEACHING ASSISTANT   *May 2020 - May 2022*

- Taught robotic programming skills (MATLAB, Simulink, and Stateflow) to neuroscience researchers to allow them to write custom programs

Education

University of Delaware   *Newark, DE*

DOCTORATE IN NEUROMECHANICS [BIOMECHANICS AND MOVEMENT SCIENCE]   *June 2019 - Present*

- 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 - Present*

- Brought 5 thesis related experiments from idea to production (develop idea and methodology, collect and analyze data, and present findings)
- Programmed 4 robotic tasks with KINARM Exoskeleton (using MATLAB and Simulink), 3 of which are used in continuing research
- Wrote custom analyses, abiding by Google's MATLAB Style Guide, using object oriented programming and git for each experiment to ensure accuracy, efficiency, reproducability, transparency, and ease to build upon
- Mentored 3 doctoral students and 3 undergraduate students to maximize learned content and conceptual/theoretical understanding
- Present research findings at various conferences via podium talks and posters
- Wrote initial manuscript drafts for each of the 5 thesis related 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

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**
2022	**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**
2023	**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**
2023	**Position matching with arms and eye movements for individuals with chronic stroke**
2023	**Robust optimization of minimum number of trials needed for experimental protocols**
2023	**Proprioceptive training for individuals with chronic stroke via robotic-joystick integration**

Technical Skills

Python | MATLAB | Data Analysis | Data Visualization | Object-Oriented Programming | Test-Driven Development | Statistical Modeling | Non-Parametric Statistics | SQL | Microsoft Office | LaTeX | Simulink Real-Time | Stateflow | C