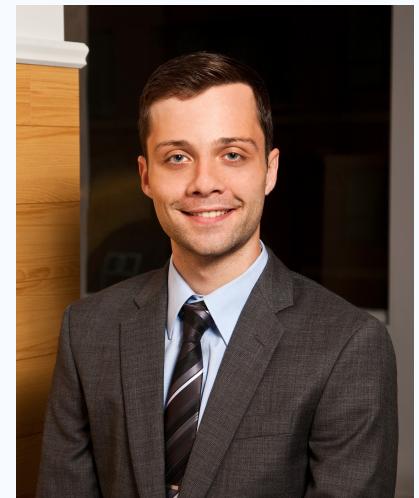


TAYLOR DUNN

I am a data scientist and statistician with five years of experience in the pharmaceutical industry, and an academic background in computational physics. I enjoy working in collaborative environments on hard problems with modern technologies and methods.



EDUCATION

2016
|
2014

- **M.Sc., Physics**
Dalhousie University 📍 Halifax, NS
 - Thesis: Image Segmentation and Modelling of Host-Pathogen Dynamics of *Salmonella*.¹
- **B.Sc., Physics, Honours (minor Mathematics)**
University of Prince Edward Island 📍 Charlottetown, PE
 - Thesis: Studying Polymer Translocation with Dissipative Particle Dynamics and Monte Carlo Simulations²

2014
|
2009

EXPERIENCE

current
|
2017

- **Biostatistician**
Ardea Outcomes 📍 Halifax, NS
 - Worked on global clinical trials and patient-centered research across multiple disease areas.
 - Assisted in study design, including the development of study protocols, statistical analysis plans, and data management plans.
 - Performed data collection, analysis, reporting, and interpretation. Aided in database maintenance and monitoring.
 - Conducted research in patient-centric outcomes, resulting in several peer-reviewed publications and presentations for scientific meetings and industry clients.
 - Led internal project management to ensure tasks are completed according to timelines. Communicated professionally with external stakeholders throughout projects.
 - Developed internal R software for effective, reproducible, and well-documented workflows.

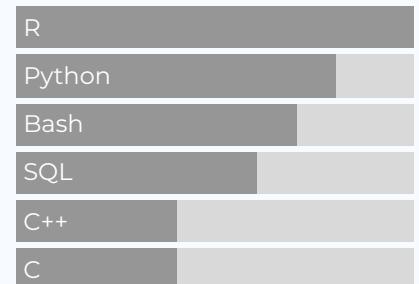
2015
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2014

- **Teaching Assistant**
Dalhousie University, Department of Physics 📍 Halifax, NS
 - Course: Introduction to Numerical Programming.
 - Aided undergraduate Physics students in exploring and modelling physical systems in Python.
 - Ran weekly tutorial sessions and marked assignments.
 - Gave lectures when the professor was absent.

CONTACT

- ✉ t.dunn19@gmail.com
🔗 tdunn.ca
🔗 GitHub
🔗 LinkedIn

LANGUAGE SKILLS



Last updated on 2022-01-12.
Source code is available [here](#).

2014
|
2011

- **Undergraduate Researcher**
University of Prince Edward Island 📍 Charlottetown, PE
 - Worked in a computational physics lab under supervision of a senior faculty member.
 - Developed software in C and C++ to simulate molecules and perform data analysis.
 - Presented results in various settings and formats (posters, presentations, papers).

- **Help Centre Tutor**
University of Prince Edward Island 📍 Charlottetown, PE
 - Ran weekly tutorial sessions where students would come for assistance in various subjects (physics, calculus, statistics, etc.).

- **Laboratory/Teaching Assistant**
University of Prince Edward Island 📍 Charlottetown, PE
 - Assisted with student instruction, equipment setup and marking of undergraduate physics labs.

2014
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2011

2012
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2010

↳ SELECTED DATA SCIENCE PROJECTS

2022

- **canadacovid³**
 - An R package to pull Canadian COVID-19 data from a public API.

- **gasr⁴**
 - An R package for simulating and analyzing goal attainment scaling data.

- **dunnr⁵**
 - A personal R package of plotting templates and functions that I commonly use.

2021

2020

✎ SELECTED DATA SCIENCE WRITING

2022

- **Canada COVID-19 data in R: creating a package⁶**
tdunn.ca
 - Detailed my steps and thought process in developing an R package that pulls Canadian COVID-19 data from a public API.

2020

- **Ordinal regression in R⁷**

tdunn.ca

- A theoretical and applied walkthrough of conducting ordinal regression in R, with both frequentist and Bayesian approaches.



PUBLICATIONS

2022

- **Patterns of Symptom Tracking by Caregivers and Patients with Dementia and Mild Cognitive Impairment: Cross-Sectional Study⁸**

Journal of Medical Internet Research

- Applied a machine learning algorithm to online user profiles, completed by caregivers of people with dementia, to predict disease severity.
Analyzed the characteristic symptoms at different stages of disease.

2020

- **Use of Patient-Reported Symptoms from an Online Symptom Tracking Tool for Dementia Severity Staging: Development and Validation of a Machine Learning Approach⁹**

Journal of Medical Internet Research

- Trained and evaluated various machine learning algorithms to predict patient dementia stage based on symptoms reported in an online app.

2019

- **The Symptoms Targeted for Monitoring in a Web-Based Tracking Tool by Caregivers of People With Dementia and Agitation: Cross-Sectional Study¹⁰**

Journal of Medical Internet Research

- Analyzed and characterized the symptom of agitation in dementia from web-based reports provided by caregivers.

2014

- **Evaluating the Applicability of the Fokker-Planck Equation in Polymer Translocation: A Brownian Dynamics Study¹¹**

Journal of Chemical Physics

- Through computer simulations, provided empirical evidence of the validity of the Fokker-Planck formalism for polymer translocation dynamics.



SELECTED PRESENTATIONS

2021

- **What is the minimum number of goals required per subject for goal attainment scaling trials: simulation study.¹²**

International Society for Quality of Life Research Conference

📍 Remote

- Source code available on GitHub¹³.

- 2021
- **The Goal Attainment Scaling Method is Robust to Violations of Normality in Goal Scales: A Simulation Study.¹⁴**
The Professional Society for Health Economics and Outcomes Research Europe Conference
 Remote
• Source code available on GitHub¹⁵.
- 2021
- **Beyond Patient Journals - Using GAS to Capture the Patient Voice¹⁶**
WorkCast Webinar
 Remote
- 2021
- **Using Goal Attainment Scaling to Capture the Patient Voice¹⁷**
Xtalks Webinar
 Remote
- 2020
- **Evaluating a symptom tracking mobile app for use in people with dementia¹⁸**
Alzheimer Europe Conference
 Remote
- 2020
- **A review of goal attainment scaling in clinical trials¹⁹**
International Society for Quality of Life Research Conference
 Remote
- 2019
- **Individualized Symptom Tracking with SymptomGuide® allows for Clinically Meaningful Interpretation of MMSE Score Changes in a Dementia Drug Trial²⁰**
Alzheimer's Association International Conference
 Los Angeles
- 2019
- **A Frailty Index Based on Routinely Collected Laboratory Safety Data Predicts Dropout in Alzheimer Disease Clinical Trial Settings²¹**
Alzheimer's Association International Conference
 Los Angeles
- 2019
- **Transitioning a patient-centred dementia symptom tracking tool from the web to mobile²²**
Alzheimer's Association International Conference
 Los Angeles
- 2019
- **Higher baseline frailty, identified by routinely collected laboratory safety data, is associated with greater cognitive decline in clinical trials of anti-dementia drugs.²³**
Clinical Trials on Alzheimer's Disease Conference
 San Diego
- 2019
- **Development of a machine learning algorithm to classify dementia stage based on reported dementia symptoms.²⁴**
Clinical Trials on Alzheimer's Disease Conference
 San Diego
- 2019
- **Exploring the patterns of cognitive symptoms tracked by caregivers and patients in online symptom profiles.²⁵**
Clinical Trials on Alzheimer's Disease Conference
 San Diego

- 2019 ● **Development and Validation of a Patient-Centered Outcome Measure for use in Dementia Drug Trials²⁶**
The Professional Society for Health Economics and Outcomes Research Conference
📍 New Orleans
- 2019 ● **A Semi-Standardized Symptom Menu to Facilitate Goal Attainment Scaling in Dementia Drug Trials: Comparison with Traditional Approaches²⁷**
The Professional Society for Health Economics and Outcomes Research Europe Conference
📍 Copenhagen
- 2018 ● **A Frailty Index Based on Routinely Collected Laboratory Safety Data Predicts Adverse Events in a Sex-Specific Manner in Clinical Trials²⁸**
Alzheimer's Association International Conference
📍 Chicago
- 2018 ● **Comparison of a Frailty Index Tool based on Clinical Assessment with one based on Routinely-Collected Laboratory Safety Data: Links Between Frailty, Adverse Events, and Function in the Setting of an Alzheimer's Disease Clinical Trial²⁹**
Alzheimer's Association International Conference
📍 Chicago
- 2018 ● **Goal Attainment Scaling scores, without defined attainment levels, were associated with standardized measures in people with vascular and mixed dementia in the VASPECT trial³⁰**
Clinical Trials on Alzheimer's Disease Conference
📍 Barcelona
- 2017 ● **A procedure to create a frailty index using routinely-collected laboratory and clinical safety data from an Alzheimer disease clinical trial³¹**
Alzheimer's Association International Conference
📍 London, UK
- 2017 ● **Symptoms targeted for treatment by caregivers of people with dementia and agitation³²**
US Psych Congress
📍 New Orleans
- 2016 ● **Modelling Host-Pathogen Dynamics of Salmonella.³³**
The New Bacteriology Conference
📍 Royal Society, London, UK
- 2015 ● **Modelling Growth in Host-Pathogen Dynamics.³⁴**
Chemical Biophysics Symposium
📍 University of Toronto
- 2014 ● **Studying polymer translocation with dissipative particle dynamics.**
Atlantic Undergraduate Research and Astronomy Conference
📍 Dalhousie University

- 2013 • **Polymer translocation dynamics through a nanopore.**
Atlantic Undergraduate Research and Astronomy Conference
📍 University of Moncton
- 2013 • **Studying polymer translocation dynamics with dissipative particle dynamics.**
UPEI Science Undergraduate Research Conference
📍 UPEI
- 2012 • **Polymer translocation dynamics through a nanopore.**
UPEI Science Undergraduate Research Conference
📍 UPEI
- 2011 • **Conformational correlation times for a tethered polymer.**
UPEI Science Undergraduate Research Conference
📍 UPEI

❖ HONOURS AND AWARDS

- 2016 |
2014
- 2014 |
2012
- 2013
- 2013
- 2012
- 2011
- 2010
- 2009
- 2009
- Nova Scotia Graduate Scholarship
- Undergraduate Student Research Award (NSERC)
- The Robert Haines Memorial Science Award of Merit
- ACEmat Award in Computational Modelling of Materials
- City of Charlottetown International Ambassador Award
- Physics Department Prize in Modern Physics
- Global Issues Excellence in Writing Competition (winner)
- University of Prince Edward Island Full Tuition Scholarship
- High School Chemistry Prize (BioVectra)

❖ LINKS

- 1: <https://dalspace.library.dal.ca/handle/10222/72174>
- 2: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/upei/thesis/thesis.pdf>
- 3: <https://taylordunn.github.io/canadacovid/>

- 4: <https://github.com/taylordunn/gasr>
- 5: <https://github.com/taylordunn/dunrr>
- 6: <https://tdunn.ca/posts/2021-12-30-canada-covid-19-data-in-r-creating-a-package/>
- 7: <https://tdunn.ca/posts/2020-03-17-ordinal-regression-in-r-part-2/>
- 8: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/papers/dunn-2022-jmir.pdf>
- 9: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/papers/shehzad-2020-jmir.pdf>
- 10: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/papers/rockwood-2019-jmir.pdf>
- 11: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/papers/polson-2014-chemphys.pdf>
- 12: <https://isoqol2021.isoqol.ipostersessions.com/default.aspx?s=59-C4-73-2F-1E-C3-15-83-6C-72-85-0D-6A-A9-A9-90>
- 13: <https://github.com/taylordunn/isoqol2021-gas-sim>
- 14: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/ispor-europe-2021/ispor-europe-2021-gas-sim.pdf>
- 15: <https://github.com/taylordunn/isoqol2021-gas-sim>
- 16: <https://www.workcast.com/register?cpak=9352846098487980>
- 17: <https://xtalks.com/webinars/using-goal-attainment-scaling-to-capture-the-patient-voice/>
- 18: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/alzheimer-europe-2020/alzheimer-europe-2020-dementia.pdf>
- 19: <https://isoqol27.isoqol.ipostersessions.com/Default.aspx?s=9A-22-6F-5E-39-E6-A2-D9-18-6F-79-DA-30-A6-6E-CC>
- 20: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/aaic-2019/aaic-2019-dementia.pdf>
- 21: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/aaic-2019/aaic-2019-frailty-camd.pdf>
- 22: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/aaic-2019/aaic-2019-symptomguide.pdf>
- 23: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/ctad-2019/ctad-2019-frailty.pdf>
- 24: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/ctad-2019/ctad-2019-staging.pdf>
- 25: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/ctad-2019/ctad-2019-symptoms.pdf>
- 26: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/ispor-2019/ispor-2019-gas.pdf>
- 27: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/ispor-europe-2019/ispor-europe-2019-gas.pdf>
- 28: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/aaic-2018/aaic-2018-frailty-camd.pdf>
- 29: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/aaic-2018/aaic-2018-frailty-vista.pdf>
- 30: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/ctad-2018/ctad-2018-gas.pdf>
- 31: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/aaic-2017/aaic-2017-frailty.pdf>
- 32: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/ardea/us-psych-congress-2017/us-psych-congress-2017.pdf>
- 33: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/dalhousie/new-bacteriology-2016/new-bacteriology-2016.pdf>
- 34: <https://github.com/taylordunn/tdunn-cv/raw/main/docs/dalhousie/cbp-2015/cbp-2015.pdf>