Dana Udwin

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EDUCATION

Doctor of Philosophy, Biostatistics — Expected May 2022
Brown University, Providence, RI
Advisor: Lorin Crawford, Ph.D.
Thesis: Interpretation Methods for Nonlinear Models

Master of Science, Statistics — May 2017
University of Massachusetts Amherst, Amherst, MA

Bachelor of Arts, Mathematics — May 2014
Smith College, Northampton, MA
Minor: East Asian Language & Literature

INDUSTRY

Data Scientist Intern — Summer 2021
Facebook, New York, New York

- Translated user-level behavioral time series into signal-rich chronological metrics that reflect depleting cellular data.
- Segmented along derived features to isolate data-constrained users.
- Administered a survey to all eligible Facebook App for Android users in Japan, which validates that model-identified data-constrained users are 2.7x as likely to "always" be concerned about running out of data.

Summer Associate — Summer 2020
RAND Corporation, Arlington, VA

- Forecast year-over-year retention in the Air Force using a recurrent neural network.
- Implemented Blinder–Oaxaca decomposition to attribute deviation from expected servicemember separation rates to population shift.

Junior Data Scientist — 2014 - 2017
MassMutual Financial Group, Amherst, MA

- Modeled likelihood to purchase life insurance in order to maximize return on direct mail advertisements.
- Operationalized customer service outreach program by constructing a pipeline linking disparate databases to score and present calling policyholders in a web application.
- Revamped corporate spend accounting through a full stack construction that ingests employees' expensed charges into a multi-page interactive visualization.
- Grouped customers using k-means clustering to inform targeted marketing campaigns.

RESEARCH

Research Assistant — Summer 2018 - Present
Advisor: Dr. Lorin Crawford
Brown University, Department of Biostatistics, Providence, RI

- Developed paradigm for performing analysis of explained variance using Gaussian processes.
- Extended a variable importance measure for Bayesian non-parametric models to the deep learning setting.

Research Assistant Fall 2017
Advisor: Dr. Roee Gutman
Brown University, Department of Biostatistics, Providence, RI

- Performed propensity score analysis on observational study of post-motor vehicle collision emergency department visits to identify causal link between receiving opioids and continued drug dependence.
- Designed and implemented sensitivity analyses to determine robustness of results under confounding.
- Restructured code base to facilitate collaboration and support reproducibility.

Summer Undergraduate Research Fellow Summer 2013
Advisor: Dr. P. Jonathon Phillips
National Institute of Standards and Technology, Gaithersburg, MD

- Analyzed performance of face recognition technologies in point-and-shoot video using 1.8 million frame-by-frame between-video similarity scores and metadata.

Research Assistant Spring 2013 - Fall 2013
Advisor: Dr. Nick Horton
Smith College, Northampton, MA

- Coauthored instructor's guide with code addendum for STatistics Education Web (STEW), the American Statistical Association's online resource for peer-reviewed K-12 lesson plans.

TEACHING

Teaching Assistant, Causal Inference, Brown University FA 2020
Co-Instructor, Biostatistics Workshop, Brown University SU 2019, SU '20, '21
Grader, Statistical Inference I, Brown University FA 2019
Teaching Assistant, Bayesian Statistical Analysis, Brown University SP 2019
Teaching Assistant, Applied Statistics, Summer@Brown SU 2018
Teaching Assistant, Applied Generalized Linear Models, Brown University SP 2018
Teaching Assistant, General, Smith College SP 2013 - SP 2014
Grader, Introduction to Statistics, Smith College SP 2013

PUBLICATIONS

Ish-Horowicz, J., **Udwin, D.**, Flaxman, S., Filippi, S., Crawford, L. (2019) "Interpreting Deep Neural Networks Through Variable Importance." *arXiv*.

Baumer, B., **Udwin, D.** (2015) "R Markdown." *WIREs: Computational Statistics*.

Stoudt, S., Cao, Y., **Udwin, D.**, Horton, N.J. (2014) "What Percent of the Continental US is Within One Mile of a Road?" *STatistics Education Web*.

COMMUNITY INVOLVEMENT

Student Ambassador 2021 - Present
School of Public Health, Brown University, Providence, RI

Social Committee 2019 - Present
Department of Biostatistics, Brown University, Providence, RI

Diversity & Inclusion Committee 2019 - Present
Department of Biostatistics, Brown University, Providence, RI

Grant Coordinator, PRIDE Business Resource 2015-2017
MassMutual Financial Group, Springfield, MA

Consultant 2015 - 2017 (Annual)
Five College DataFest, Northampton, MA

Tour Guide 2013 - 2014
Smith College, Northampton, MA

TALKS

Co-Instructor, R Summer Workshop Series 2016
Western Mass Statistics and Data Science Meet-Up
Graduate Researchers in Data (GRiD), University of Massachusetts, Amherst
Graduate Women in STEM (GWiS), University of Massachusetts, Amherst
Northampton, MA

Guest Lecturer, d3 and Crossfilter 2015
Western Mass Statistics and Data Science Meet-Up, Northampton, MA

PROFESSIONAL DEVELOPMENT

Sheridan Teaching Seminar (Certificate I), Brown University 2020
Best in Show, Five College Datafest 2014
Honorable Mention, Undergraduate Statistics Class Project Competition 2014
Successful Participant, Mathematical Contest in Modeling 2013

COMPUTER SKILLS

Languages & Software: R, Python, C++, SQL, Bash.
Visualization: HTML, CSS, JavaScript.
Big Data: Spark, HDFS, Vertica.
Workflow: Git, LaTeX.