Taylor B. Arnold
Curriculum Vitae

Department of Mathematics and Computer Science
University of Richmond
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PROFESSIONAL APPOINTMENTS

University of Richmond, Assistant Professor of Statistics (Tenure Track), 2016 – Present

Yale University, Department of Statistics, Lecturer, 2015 – 2016

AT&T Labs Research, Statistics Department, Senior Scientist, 2014 – 2016

EDUCATION

Ph.D., Statistics, Yale University, May 2013

M.A., Statistics, Yale University, December 2009

B.A., Mathematics, Bowdoin College, May 2007

PUBLICATIONS

Books

A Computational Approach to Statistical Learning.
Taylor Arnold, Michael Kane, and Bryan Lewis. New York: Chapman & Hall/CRC Texts in Statistical Science, 2019. In Press. 387 pages.

Humanities Data in R: Exploring Networks, Geospatial Data, Images, and Text.
Taylor Arnold and Lauren Tilton. New York: Springer Publishing, 2015. 211 pages.

Refereed Journal Articles

"Collaboration, Teaching, and Interpretation: Making Data Construction Visible"
Taylor Arnold, Courtney Rivard, and Lauren Tilton. Digital Humanities Quarterly. Accepted.

"Tidy data model for natural language processing using cleanNLP."
Taylor Arnold. The R Journal, 9.2 (2017): 248-267.

"kerasR: Interface to the Keras deep learning library."
Taylor Arnold. Journal of Open Source Software, 2.14 (2017): 296.

"Knowledge creation through recommender systems."
Taylor Arnold, Peter Leonard, and Lauren Tilton. Digital Scholarship in the Humanities, 32.3 (2017).

"iotools: High-performance tools for R."
Taylor Arnold, Michael Kane, and Simon Urbanek. The R Journal, 9.1, (2017): 6–13.

"Uncovering latent metadata in the FSA-OWI photographic archive."
Taylor Arnold, Stacey Maples, Lauren Tilton, and Laura Wexler. Digital Humanities Quarterly, 11.2 (2017).

"Efficient implementations of the generalized lasso dual path algorithm."
Taylor Arnold and Ryan Tibshirani. Journal of Computational and Graphical Statistics, 25.1, (2016): 1-27.

"Twenty-four-hour pattern of intraocular pressure in patients with ocular hypertension."
Tomas Grippo, John Liu, Nazlee Zebardast, Taylor Arnold, Grant Moore, and Robert Weinreb. Investigative Ophthalmology & Visual Science, 54.1 (2013): 512-517.

"Nonparametric goodness-of-fit tests for discrete null distributions."
Taylor Arnold and John Emerson. The R Journal, 3.2 (2011): 34-39.

"Statistical sleuthing by leveraging human nature: A study of Olympic figure skating."
John Emerson and Taylor Arnold. The American Statistician, 65.3 (2011). 143-148.

"Who talks, and who's listening? Networks of international security studies."
Bruce Russett, and Taylor Arnold. Security Dialogue, 41.6 (2010): 589-598.

Refereed Book Chapters

"Depth in Deep Learning: Layered, Knowledgeable, and Impenetrable."
Taylor Arnold and Lauren Tilton. *Deep Mediations*. University of Minnesota Press, 2020. Accepted.

"What's in a Name?"
Taylor Arnold and Lauren Tilton. *Debates in DH: Institutions, Infrastructures at the Interstices.* University of Minnesota Press, 2020. Accepted.

"New Data: The Role of Statistics in DH."
Taylor Arnold and Lauren Tilton. *Debates in the Digital Humanities*. University of Minnesota Press, 2019. In Press.

Refereed Proceedings

"Cross-Discourse and Multilingual Exploration of Text with the DualNeighbors Algorithm"
Taylor Arnold and Lauren Tilton. 2nd Joint SIGHUM Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature (LaTeCH-CLfL 2018).

"Predicting CEFRL levels in learner English on the basis of metrics and full texts"
Taylor Arnold, Nicolas Ballier, Thomas Gaillat, and Paula Lissón. In: *Proceedings of the 20th Conférence sur L'Apprentissage Automatique*, (2018).

Other Peer Reviewed Work

"Industrial Research in Applied Statistics."
Taylor Arnold. Notices of the American Mathematical Society. In Press, (2019).

"Basic text processing in R."
Taylor Arnold and Lauren Tilton. The Programming Historian, 6 (2017).

Manuscripts in Review

"Visual Authority, Privacy, and Surveillance in the Age of Deepfakes"
Taylor Arnold. Convergence Journal.

"Distant Viewing: Analyzing Large Visual Corpora"
Taylor Arnold and Lauren Tilton. Digital Scholarship in the Humanities.

"Beyond Lexical Frequencies: Using R for Text Analysis in the Digital Humanities"
Taylor Arnold, Nicolas Ballier, Paula Lissón, and Lauren Tilton. Language Evaluation.

TEACHING

[Primary instructor for all listed courses.]

University of Richmond

- Statistical Learning (MATH 389 / CS 389): Spring 2019
- Intro. to Statistical Modeling (MATH 209a; MATH 209b): Spring 2019
- Data Science (MATH 289): Fall 2018
- Intro. to Statistical Modeling (MATH 209): Fall 2018
- Intro. to Statistical Modeling (MATH 209a; MATH 209b; MATH 209c): Spring 2018
- Regression Models (MATH 289): Fall 2017
- Statistical Learning (MATH 395a / CS 329b): Fall 2017
- Probability (MATH 329): Spring 2017
- Intro. to Statistical Modeling (MATH 209a; MATH 209b): Spring 2017
- Intro. to Statistical Modeling (MATH 209b; MATH 209c): Fall 2016

Yale University

- Data Mining and Machine Learning (STAT 365/665): Spring 2016
- Linear Models (STAT 312/612): Spring 2016
- Introduction to Statistics (STAT 107): Summer 2010

Connecticut College

- Introduction to Statistics (MAT 107a; 107b): Spring 2011

EXTERNAL GRANTS AND AWARDS

NEH Digital Advancement Grants: Level II. Co-Director. "Distant Viewing Toolkit." HAA-261239-18. **$99,975**. (2018-2020).

Université Paris Diderot. Visiting Faculty Bursary. **€9,500**. (2017).

American Council of Learned Societies (ACLS) Digital Extension Grant. Co-Director. "Photogrammar: Seeing and Hearing America's Documentary Record." **$150,000**. (2016-2018).

NEH Digital Projects for the Public: Discovery Grants. Digital Lead. "Participatory Media." MD-234145-16. **$30,000**. (2015-2018).

NEH Digital Start-Up. Co-Director. "Photogrammar." HD-51421-11. **$50,000**. (2011-2015).

SELECTED TALKS AND WORKSHOPS

- Invited Workshop Presenter, "Distant Viewing with Deep Learning", Carnegie Mellon University, 2018-05-30 to 2018-06-01
- Invited Workshop Participant, "Natural Language Processing in R", NYU, 2018-04-20 to 2017-04-21
- Invited Chair, Doing Digital History, CHNM, George Mason University, 2018-03-17
- Invited Presentation, Regional DH Symposium, University of Virginia, 2018-03-10
- Poster, JSM 2017, "Computer Vision Meets Television", 2017-07-29 to 2017-08-03
- Tutorial Presenter, useR 2017, 2017-07-04
- Invited Workshop Participant, "Natural Language Processing in R", London School of Economics, 2018-04-21 to 2018-04-22
- Invited talk: Washington and Lee University, "Digital Humanities, Data Analysis and Its Possibilities", 2017-02-02
- Workshop, UVa, "Participatory Media", 2017-02-23 to 2017-02-24
- Culture Analytics and User Experience Design, Institute for Pure and Applied Mathematics, UCLA, April 2016.
- Image Processing and Reunification Workshop, University of Maryland 2016-09-16 to 2016-09-17.
- Hollins University, "Participatory Media", 2016-10-16

SELECTED SOFTWARE

- **DVT**: Distant Viewing Toolkit (Python library) for the Cultural Analysis of Moving Images. `https://github.com/distant-viewing/dvt`
- **kerasR**: R interface to the keras library. `https://github.com/statsmaths/kerasR`.
- **cleanNLP**: R package providing annotators and a tidy data model for natural language processing. `https://github.com/statsmaths/cleanNLP`
- **tif**: Text Interchange Formats. `https://github.com/ropensci/tif`

- **iotools**: High-performance I/O tools to run distributed R jobs seamlessly on Hadoop and handle chunk-wise data processing. `https://github.com/s-u/iotools`

SELECTED CONFERENCE ACTIVITY

- Contributed Paper, JSM 2017, "Grapheme, Phoneme, Morpheme: Features for Text Classification", 2017-07-29 to 2017-08-03
- Paper, DH 2017, "Mapping 20th Century America", 2017-08-08 to 2017-08-11
- Poster, DH 2017, "Distant Seeing TV", 2017-08-08 to 2017-08-11
- Joint Statistical Meetings, "What to do with messy data? Four case studies." Chair and Organizer. 2016-07-30 to 2016-08-04.
- Digital Humanities, "Photogrammar: Organizing Visual Culture through Geography, Text Mining, and Statistical Analysis." 2016-07-07 to 2016-07-12.
- "Using R in Humanities Research", Institute for Liberal Arts Digital Scholarship (ILiADS), Hamilton College, July 2015.
- American Studies Association Annual Meeting, "Photogrammar in Puerto Rico: Reading the FSA's 1930s Visual Archive with Twenty-first-Century Visualization Tools." 15-18 November, 2012.
- Joint Statistical Meetings, "User Oriented High Dimensional Linear Model Estimation." Contributed Talk, 28 July - 2 August, 2012.
- Joint Statistical Meetings, "Statistical Sleuthing by Leveraging Human Nature." Invited Poster, 28 July - 2 August, 2012.
- useR! Meeting, "Package hdlm: Fitting High Dimensional Linear Models." Contributed Talk, 12-15 June, 2012.
- American Historical Association Annual Meeting, "From Archive to Interdisciplinary Tool: Transforming Our Image of the FSA-OWI Photograph Collection." Contributed Talk, January 5-8, 2012.
- American Studies Association Annual Meeting, "Digital Humanities Lightning Shorts." Contributed Talk, 20-23 October 2011.
- useR! Meeting, "Nonparametric Goodness-of-Fit Tests for Discrete Null Distributions." Contributed Talk, 16-18 August 2011.

PROFESSIONAL SERVICE

- Associate Editor of Statistics: Pediatric Neurology (2017-Present)
- Proceedings of the National Academy of Sciences, Referee (2018)
- International Journal of Forecasting, Referee (2018)
- Distributed Computing Working Group, Member (2016-2017)
- American Statistical Association, Section Program Chair (2015-2016)
- Digital Humanities Quarterly, Referee (2014-2017)
- Digital Art History, Referee (2015-2016)
- Biometrika, Referee (2015)
- Journal of Statistical Software, Referee (2015-2018)
- Neurology, Referee (2013-2016)
- The R-Journal, Referee (2012-2017)

UNIVERSITY SERVICE

- Mathematics, Director Position, Search Committee (2018-2019)
- University Library Executive Committee (2017-Present; Chair, 2018-2019)
- BML / THC Envisioning Steering Committee (2017-Present)
- Jackson Award for Excellence in Library Research in the Social Sciences (2017)
- Math and Computer Science Department Colloquium Chair (2016-Present)