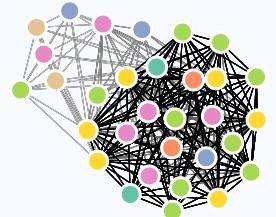


JAMES CRANLEY

I have made visualizations viewed by hundreds of thousands of people¹, sped up query times for 25 terabytes of data by an average of 4,800 times², and built packages for R³ that let you do magic⁴.



EDUCATION

2024
|
2021

- **Wellcome Trust Doctoral Fellowship**
Teichmann Lab 📍 Sanger Institute
 - Single cell and spatial transcriptomic analysis of the adult and developing human heart
 - 50% wet lab edata generatoin (single-cell and spatial transcriptomic), 50% bioinformatics (python, Bash, R)
- **PG Certificate in Medical Education**
Institute of Continuing Education 📍 Cambridge University

2019
|
2018

RESEARCH EXPERIENCE

2024
|
2021

- **PhD Fellowship**
Teichmann Lab 📍 Sanger Institute
 - Single cell and spatial transcriptomic analysis of the adult and developing human heart
 - 50% wet lab edata generatoin (single-cell and spatial transcriptomic), 50% bioinformatics (python, Bash, R)
- **Academic Clinical Fellow pt. 3**
Munroe Lab 📍 Queen Mary University of London
 - Genome-wide associattion study into ECG trait (PR interval) using UK biobank data

2018
|
2018

- **Academic Clinical Fellow pt. 2**
MacRae Lab 📍 Harvard University
 - Literature review and introduction to zebrafish model

2017
|
2017

- **Academic Clinical Fellow pt. 1**
Huang Lab 📍 Cambridge University

2016
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2016

- **Intercalated BSc**
Herring Lab 📍 Oxford University

2013
|
2012

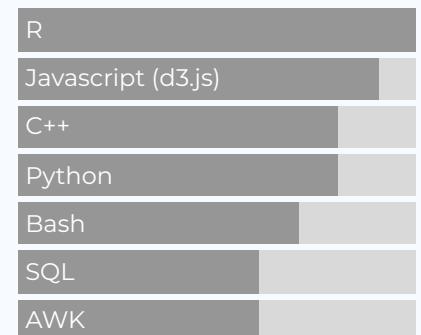
- **Investigating the role of the neuropeptide Galanin in cardiac autonomics using a guinea pig Langendorff model**

View this CV online with links at
[/Users/jc48/Documents/GitHub/jamescranley.github.io/cv/cv.html](https://Users/jc48/Documents/GitHub/jamescranley.github.io/cv/cv.html)

CONTACT

- ✉ jc48@sanger.ac.uk
🐦 [jamescranley](#)
➲ [james-cranley](#)
🔗 [james-cranley.github.io/](#)
linkedin [linkedin.com/in/james-cranley-23347341/](#)

LANGUAGE SKILLS



Made with the R package
[pagedown](#).

The source code is available on
github.com/hstrayer/cv.

Last updated on 2022-12-26.



INDUSTRY EXPERIENCE

current
|
2017

- **Specialty Training, Cardiology**
East of England 📍 Royal Papworth Hospital, UK
 - ST6: Royal Papworth Hospital
 - ST5: Norfolk & Norwich Hospital
 - ST3 & ST4: Addenbrooke's Hospital

Current
|
2020

- **Software Engineer**
RStudio 📍 Remote
 - Helping make programming web applications with R easier and more beautiful on the Shiny team

2016
|
2016

- **Data Journalist - Graphics Department**
New York Times 📍 New York, New York
 - Reporter with the graphics desk covering topics in science, politics, and sport.
 - Work primarily done in R, Javascript, and Adobe Illustrator.

2015
|
2015

- **Engineering Intern - User Experience**
Dealer.com 📍 Burlington, VT
 - Built internal tool to help analyze and visualize user interaction with back-end products.

2015
|
2015

- **Data Science Intern**
Dealer.com 📍 Burlington, VT
 - Worked with the product analytics team to help parse and visualize large stores of data to drive business decisions.

2015
|
2014

- **Data Artist In Residence**
Conduce 📍 Carpinteria, CA
 - Envisioned, prototyped and implemented visualization framework in the course of one month.
 - Constructed training protocol for bringing third parties up to speed with new protocol.

Foundation training was in North West Thames, followed by Core Medical and Cardiology training in the East of England (run-through)



TEACHING EXPERIENCE

I am passionate about education. I believe that no topic is too complex if the teacher is empathetic and willing to think about new methods of approaching task.

2020

- **Javascript for Shiny Users**

RStudio::conf 2020

- Served as TA for two day workshop on how to leverage Javascript in Shiny applications
- Lectured on using R2D3 package to build interactive visualizations.⁵

2019

- **Data Visualization Best Practices**

DataCamp

- Designed from bottom up course to teach best practices for scientific visualizations.
- Uses R and ggplot2.
- In top 10% on platform by popularity.

2019

- **Improving your visualization in Python**

DataCamp

- Designed from bottom up course to teach advanced methods for enhancing visualization.
- Uses python, matplotlib, and seaborn.

2018

- **Advanced Statistical Learning and Inference**

Vanderbilt Biostatistics Department

📍 Nashville, TN

- TA and lectured
- Topics covered from penalized regression to boosted trees and neural networks
- Highest level course offered in department

2018

- **Advanced Statistical Computing**

Vanderbilt Biostatistics Department

📍 Nashville, TN

- TA and lectured
- Covered modern statistical computing algorithms
- 4th year PhD level class

2017

- **Statistical Computing in R**

Vanderbilt Biostatistics Department

📍 Nashville, TN

- TA and lectured
- Covered introduction to R language for statistics applications
- Graduate level class

↗ SELECTED DATA SCIENCE WRITING

2019

- **Using AWK and R to Parse 25tb⁷**

LiveFreeOrDichotomize.com

- Story of parsing large amounts of genomics data.
- Provided advice for dealing with data much larger than disk.
- Reached top of HackerNews.

I regularly blog about data science and visualization on my blog LiveFreeOrDichotomize.⁶

- 2018
- **Classifying physical activity from smartphone data⁸**
RStudio Tensorflow Blog
 - Walk through of training a convolutional neural network to achieve state of the art recognition of activities from accelerometer data.
 - Contracted article.
- 2018
- **The United States of Seasons⁹**
LiveFreeOrDichotomize.com
 - GIS analysis of weather data to find the most ‘seasonal’ locations in United States
 - Used Bayesian regression methods for smoothing sparse geospatial data.
- 2017
- **A year as told by fitbit¹⁰**
LiveFreeOrDichotomize.com
 - Analyzing a full years worth of second-level heart rate data from wearable device.
 - Demonstrated visualization-based inference for large data.
- 2017
- **MCMC and the case of the spilled seeds¹¹**
LiveFreeOrDichotomize.com
 - Full Bayesian MCMC sampler running in your browser.
 - Coded from scratch in vanilla Javascript.
- 2017
- **The Traveling Metallurgist¹²**
LiveFreeOrDichotomize.com
 - Pure javascript implementation of traveling salesman solution using simulated annealing.
 - Allows reader to customize the number and location of cities to attempt to trick the algorithm.

≡ SELECTED PRESS (ABOUT)

- 2017
|
2017
- **Great paper? Swipe right on the new ‘Tinder for preprints’ app¹³**
Science
 - Story of the app Papr¹⁴ made with Jeff Leek and Lucy D’Agostino McGowan.
 - **Swipe right for science: Papr app is ‘Tinder for preprints’¹⁵**
Nature News
 - Second press article for app Papr.

2016
|
2016

- **The Deeper Story in the Data¹⁶**
University of Vermont Quarterly
 - Story on my path post graduation and the power of narrative.

2016
|
2016

[selected press (by)]

2016
|
2016

- **The Great Student Migration¹⁷**
The New York Times
 - Most shared and discussed article from the New York Times for August 2016.

2016
|
2016

- **Wildfires are Getting Worse, The New York Times¹⁸**

The New York Times

- GIS analysis and modeling of fire patterns and trends
- Data in collaboration with NASA and USGS

2016
|
2016

- **Who's Speaking at the Democratic National Convention?¹⁹**

The New York Times

- Data scraped from CSPAN records to figure out who talked and past conventions.

2016
|
2016

- **Who's Speaking at the Republican National Convention?²⁰**

The New York Times

- Used same data scraping techniques as Who's Speaking at the Democratic National Convention?

2016
|
2016

- **A Trail of Terror in Nice, Block by Block²¹**

The New York Times

- Led research effort to put together story of 2016 terrorist attack in Nice, France in less than 12 hours.
- Work won Silver medal at Malofiej 2017, and gold at Society of News and Design.

[selected publications, posters, and talks]

2020

- **Building a software package in tandem with machine learning methods research can result in both more rigorous code and more rigorous research**
ENAR 2020
 - Invited talk in Human Data Interaction section.
 - How and why building an R package can benefit methodological research

- 2020
- **Stochastic Block Modeling in R, Statistically rigorous clustering with rigorous code²²**
RStudio::conf 2020
 - Invited talk about new sbmR package²³.
 - Focus on how software development and methodological research can improve both benefit when done in tandem.
- 2020
- **PheWAS-ME: A web-app for interactive exploration of multimorbidity patterns in PheWAS²⁴**
Bioinformatics
 - Manuscript detailing application for the exploration of multimorbidity patterns in PheWAS analyses
 - See landing page²⁵ for more information.
- 2019
|
2019
- **Charge Reductions Associated with Shortening Time to Recovery in Septic Shock²⁶**
Chest
 - Authored with Wesley H. Self, MD MPH; Dandan Liu, PhD; Stephan Russ, MD, MPH; Michael J. Ward, MD, PhD, MBA; Nathan I. Shapiro, MD, MPH; Todd W. Rice, MD, MSc; Matthew W. Semler, MD, MSc.
- 2019
|
2019
- **Multimorbidity Explorer | A shiny app for exploring EHR and biobank data²⁷**
RStudio::conf 2019
 - Contributed Poster. Authored with Yaomin Xu.
- 2019
|
2019
- **Taking a network view of EHR and Biobank data to find explainable multivariate patterns²⁸**
Vanderbilt Biostatistics Seminar Series
 - University wide seminar series.
- 2019
- **Patient-specific risk factors independently influence survival in Myelodysplastic Syndromes in an unbiased review of EHR records**
Under-Review (copy available upon request.)
 - Bayesian network analysis used to find novel subgroups of patients with Myelodysplastic Syndromes (MDS).
 - Analysis done using method built for my dissertation.
- 2019
- **Patient specific comorbidities impact overall survival in myelofibrosis**
Under-Review (copy available upon request.)
 - Bayesian network analysis used to find robust novel subgroups of patients with given genetic mutations.
 - Analysis done using method built for my dissertation.

- 2018 | 2018
- **R timelineViz: Visualizing the distribution of study events in longitudinal studies**
Under-Review (copy available upon request.)
 - Authored with Alex Sunderman of the Vanderbilt Department of Epidemiology.
- 2017 | 2017
- **Continuous Classification using Deep Neural Networks²⁹**
Vanderbilt Biostatistics Qualification Exam
 - Review of methods for classifying continuous data streams using neural networks
 - Successfully met qualifying examination standards
- 2015 | 2015
- **Asymmetric Linkage Disequilibrium: Tools for Dissecting Multiallelic LD**
Journal of Human Immunology
 - Authored with Richard Single, Vanja Paunic, Mark Albrecht, and Martin Maiers.
- 2015 | 2015
- **An Agent Based Model of Mysis Migration³⁰**
International Association of Great Lakes Research Conference
 - Authored with Brian O'Malley, Sture Hansson, and Jason Stockwell.
- 2015 | 2015
- **Declines of Mysis diluviana in the Great Lakes**
Journal of Great Lakes Research
 - Authored with Peter Euclide and Jason Stockwell.

🔗 LINKS

- 1: <https://www.nytimes.com/interactive/2016/08/26/us/college-student-migration.html>
- 2: https://livefreeordichotomize.com/2019/06/04/using_awk_and_r_to_parse_25tb/
- 3: <https://github.com/hstrayer/shinysense>
- 4: <http://nickstrayer.me/dataDayTexas/>
- 5: http://nickstrayer.me/js4shiny_r2d3/slides
- 6: <https://livefreeordichotomize.com/>
- 7: https://livefreeordichotomize.com/2019/06/04/using_awk_and_r_to_parse_25tb/
- 8: <https://blogs.rstudio.com/tensorflow/posts/2018-07-17-activity-detection/>
- 9: <https://livefreeordichotomize.com/2018/02/12/the-united-states-of-seasons/>
- 10: <https://livefreeordichotomize.com/2017/12/27/a-year-as-told-by-fitbit/>
- 11: <https://livefreeordichotomize.com/2017/10/14/mcmc-and-the-case-of-the-spilled-seeds/>
- 12: <https://livefreeordichotomize.com/2017/09/25/the-traveling-metallurgist/>
- 13: <https://www.sciencemag.org/news/2017/06/great-paper-swipe-right-new-tinder-preprints-app>
- 14: <https://jhubiostatistics.shinyapps.io/papr/>
- 15: <https://www.nature.com/news/swipe-right-for-science-papr-app-is-tinder-for-preprints-1.22163>

- 16: https://www.uvm.edu/uvmnews/news/deeper_story_data
- 17: [https://www.nytimes.com/interactive/2016/08/26/us/college student migration.html?smid=pl share](https://www.nytimes.com/interactive/2016/08/26/us/college-student-migration.html?smid=pl-share)
- 18: [https://www.nytimes.com/interactive/2016/07/25/us/wildfire seasons los angeles.html](https://www.nytimes.com/interactive/2016/07/25/us/wildfire-seasons-los-angeles.html)
- 19: [https://www.nytimes.com/2016/07/26/upshot/democrats may not be unified but their convention speakers are.html](https://www.nytimes.com/2016/07/26/upshot/democrats-may-not-be-unified-but-their-convention-speakers-are.html)
- 20: [https://www.nytimes.com/2016/07/19/upshot/whos not speaking how this republican convention differs.html?smid=pl share](https://www.nytimes.com/2016/07/19/upshot/whos-not-speaking-how-this-republican-convention-differs.html?smid=pl-share)
- 21: [https://www.nytimes.com/interactive/2016/07/14/world/europe/trail of terror france.html](https://www.nytimes.com/interactive/2016/07/14/world/europe/trail-of-terror-france.html)
- 22: http://nickstrayer.me/rstudioconf_sbm
- 23: <https://tbilab.github.io/sbmR/>
- 24: [https://academic.oup.com/bioinformatics/advance article abstract/doi/10.1093/bioinformatics/btaa870/5922817?redirectedFrom=fulltext](https://academic.oup.com/bioinformatics/advance-article-abstract/doi/10.1093/bioinformatics/btaa870/5922817?redirectedFrom=fulltext)
- 25: https://prod.tbilab.org/phewas_me_info/
- 26: <https://www.ncbi.nlm.nih.gov/pubmed/30419234>
- 27: http://nickstrayer.me/rstudioconf19_me_poster/
- 28: http://nickstrayer.me/biostat_seminar/
- 29: http://nickstrayer.me/qualifying_exam/
- 30: [https://www.semanticscholar.org/paper/An Agent Based Model of the Diel Vertical Migration Strayer Stockwell /40493c78e8ecf22bd882d17ec99fd913ec4b9820](https://www.semanticscholar.org/paper/An-Agent-Based-Model-of-the-Diel-Vertical-Migration-Strayer-Stockwell-40493c78e8ecf22bd882d17ec99fd913ec4b9820)