

TIMOTHY KEYES

I am a data scientist, bioinformatician, and cancer biologist. In my work, I develop statistical and machine learning algorithms for analyzing high-dimensional single-cell data and predicting clinical outcomes in cancer patients.

I am searching for a position at the intersection of biomedical data science, machine learning, and medicine where I can use data to solve problems relevant to human health.

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🐦 [@timothykeyes](https://twitter.com/timothykeyes)
🐙 [keyes-timothy](https://github.com/keyes-timothy)
🔗 keyes-timothy.github.io
in [timothy-keyes](https://timothy-keyes.com)

🎓 EDUCATION

- Current | 2015
- **M.D./Ph.D. – Cancer Biology**
Stanford University 📍 Stanford, CA
 - National Cancer Institute (NCI) National Research Service Award fellow
 - Advisors: Kara Davis and Garry Nolan
- Current | 2020
- **M.S. – Biomedical Informatics (concurrent with M.D./Ph.D.)**
Stanford University 📍 Stanford, CA
- 2014 | 2010
- **B.A. – Psychology and Computational Neuroscience**
Princeton University 📍 Princeton, NJ
 - Summa cum laude
 - GPA: 3.99

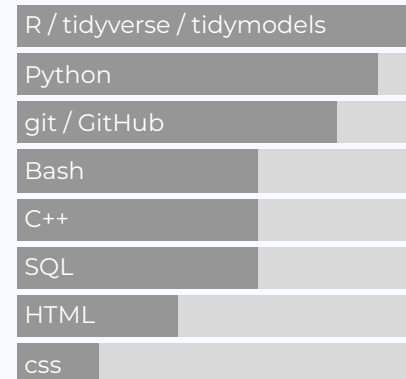
💼 SELECT EMPLOYMENT

- Current | 2022
- **Data Science Mentor – Posit Academy**
Posit, PBC (formerly RStudio, PBC) 📍 Stanford, CA
 - Leading group-based instruction and one-on-one mentoring for Posit Academy cohorts learning R and Python
 - Engaging in regular professional development programming with experienced data science educators
- 2022
- **Graduate Intern – Oncology Bioinformatics, gRED**
Genentech, Inc 📍 South San Francisco, CA
 - Codeveloped a novel algorithm for detecting transcription factor network perturbations in cancer using Bayesian network modeling
 - Automated a multiomic data integration pipeline for ATAC- and RNA-seq

📖 SELECT PUBLICATIONS

- 2022
- **{tidytof}: A user-friendly framework for scalable and reproducible high-dimensional cytometry data analysis.**
Under review (copy available upon request)
 - Keyes TJ, Koladiya A, Lo YC, Nolan GP, Davis KL.
 - Project website: <https://keyes-timothy.github.io/tidytof/>
- 2022
- **CytofIn enables Integrated Analysis of Public Mass Cytometry Datasets using Generalized Anchors**
[Nature Communications](#)
 - Lo YC, Keyes TJ, Jager A, Sarno J, Domizi P, Majeti R, Sakamoto KM, Lacayo N, Mulligan CG, Waters J, Sahaf B, Bendall SC, Davis KL
- 2020
- **A cancer biologist's primer on machine learning applications in high-dimensional cytometry**
[Cytometry](#)
 - Keyes TJ, Domizi P, Lo YC, Nolan GP, and Davis KL

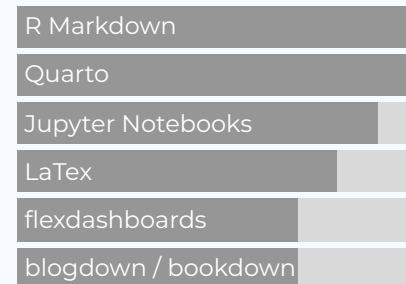
🔧 PROGRAMMING



📊 DATA ANALYSIS

Exploratory data analysis
Data visualization (e.g. ggplot2)
Data cleaning (e.g. dplyr, pandas)
Deep Learning (Keras, TF)
Machine learning (e.g. Factor Analysis, GLMs, SVMs, Tree-based models)

📄 LITERATE CODING



Resume generated in R with
[pagedown](#)




Source code:
github.com/keyes-timothy/cv

Updated January 23, 2023.






OPEN-SOURCE SOFTWARE


- **tidytof: A user-friendly framework for interactive and highly reproducible cytometry data analysis**
 (Role: Author, Maintainer)
 - An R package for analyzing high-dimensional cytometry data using the tidyverse
- **MARX: A novel algorithm for detecting cancer-specific single-cell features**
 (Role: Author, Maintainer)
 - An R package that implements Matrix factorization and Residual Expression (MARX), an algorithm for comparing high-dimensional biological measurements to a lower-dimensional reference linear subspace
- **CytofIn: An R package for CyTOF data integration**
 (Role: Contributor)
 - An R package for homogenizing and normalizing heterogeneous mass cytometry (CyTOF) data from diverse data sources



LEADERSHIP

Current
|
2018

- **Co-founder - Executive Board**
[Medical Student Pride Alliance](#), 501(c)(3)  Birmingham, AL
 - Co-founded national non-profit organization advocating for LGBTQ+ medical students
 - Led Research & Analytics division, resulting in multiple publications

- **Awards**
 Stanford University School of Medicine  Stanford, CA
 - American Society of Hematology (ASH) Abstract Achievement Award (2022)
 - rstudio::global(2021) Diversity Scholarship (2021)
 - Point Foundation Graduate Student Scholarship (2020)
 - National Cancer Institute Ruth L. Kirschstein Pre-doctoral National Research Service Award (2019)

2021
|
2017

- **Teaching**
 Stanford University School of Medicine  Stanford, CA
 - R for Data Science (2021)
 - Immunology in Health and Disease (2017-2019)



GRANTS

2024
|
2021

- **Deep Neural Network Prediction of Relapse in Pediatric Acute Leukemia**
[The Mark Foundation for Cancer Research](#) (ASPIRE II Award); \$750,000

2023
|
2018

- **Computational Approaches to Predicting Post-treatment Relapse in Pediatric Acute Myeloid Leukemia**
[The Andrew McDonough B+ \(Be Positive\) Foundation](#); \$150,000



REFERENCES

- **Kara Davis, DO**
 Stanford University School of Medicine (PhD Co-advisor)
 - email: kardavis@stanford.edu
- **Garry Nolan, PhD**
 Stanford University School of Medicine (PhD Co-advisor)
 - email: gnolan@stanford.edu

