

EDUCATION	<b>University of Southern California</b> , Los Angeles, USA <i>Ph.D. in Computational Biology and Bioinformatics</i> Guide: Dr. Andrew D. Smith Dissertation: <a href="#">Comparative genomics of translational regulation</a>	[2014 - 2020]
	<b>University of Southern California</b> , Los Angeles, USA <i>M.S. in Computer Science (Data Science track)</i> Department of Computer Science	[2018 - 2019]
	<b>University of Southern California (USC)</b> , Los Angeles, USA <i>M.S. in Statistics</i> Department of Mathematics	[2016 - 2018]
	<b>Indian Institute of Technology Bombay (IITB)</b> , Mumbai, India <i>Bachelor of Technology and Master of Technology in Chemical Engineering</i> Department of Chemical Engineering Guide: Dr. Santosh B. Noronha Masters Thesis: <a href="#">Pattern Recognition in Clinical Data</a>	[2009 - 2014]
PROFESSIONAL EXPERIENCE	<b>IIT Bombay</b> , Mumbai, India <i>Assistant Professor</i> Koita Centre for Digital Health IIT Bombay	[2024 - Present]
	<b>New York Genome Center (NYGC)</b> , NY, USA <i>Postdoctoral Research Associate</i> Research Focus: <b>Statistical methods for single-cell genomics</b> Advisor: Dr. Rahul Satija	[2020 - 2024]
	<b>Strand Life Sciences</b> , Bengaluru, India <i>Research Intern</i> Research Focus: <b>Machine learning for histopathology image classification</b> Advisor: Dr. Radhakrishna Bettadapura	[2018 - 2018]
	<b>European Bioinformatics Institute, Cambridge, UK</b> <i>Trainee</i> Research Focus: <b>Automated search for enzyme reactions</b> May 2012 - July 2012; February 2014 - April 2014	[2012,2014]
	<b>Google</b> <i>Google Summer of Code Intern</i> Intern for: Connexions (2012), Galaxy (2013), and statsmodels (2015) projects	[2012,2013,2015]
	<b>SlideShare</b> <i>Intern</i>	[2011]
GRANTS AND PATENTS	<ul style="list-style-type: none"><li>- Gupta-Klinsky India Institute at Johns Hopkins University and Koita Centre for Digital Health Breakthrough Research Grant on Digital Health. \$100,000 (Co-PI)</li><li>- Protein Autoantibody Biomarker for Gliomas, Patent # 469972</li><li>- DST-Inspire Faculty Fellowship (declined)</li><li>- Google Cloud Research Credits - \$10,000 in Google educational credits</li></ul>	[2024] [2024] [2023] [2021]

## HONOURS AND AWARDS

- Open Bioinformatics Foundation Travel Fellowship [2019]
- International Society for Computational Biology Travel Fellowship [2019]
- Outstanding Teaching Assistant, USC [2019]
- Provost Fellowship, awarded to outstanding incoming PhD students at USC [2014]
- Gandhian Young Technological Innovation Award (for PulseOximeter) [2014]
- Gandhian Young Technological Innovation Award (for SpectralEye) [2013]
- Institute Technical Special Mention (2010, 2011, and 2012), IITB [2010-12]
- Undergraduate Research Award, IITB [2012]
- Kishor Vaignyanik Protsahan Yojana (KVPY) Fellowship [2007]
- Homi Bhabha Young Scientists' Gold Medal [2005]

## PUBLICATIONS /PREPRINTS

† = equal contribution.

1. **Saket Choudhary** and Rahul Satija. *Comparison and evaluation of statistical error models for scRNA-seq*. Genome Biology (2022) [Online]
2. Yuhan Hao, Tim Stuart, Madeline Kowalski, **Saket Choudhary**, Paul Hoffman, Austin Hartman, Avi Srivastava, Gesmira Molla, Shaista Madad, Carlos Fernandez-Granda, and Rahul Satija. *Dictionary learning for integrative, multimodal, and scalable single-cell analysis*. Nature Biotechnology (2023) [Online]
3. Madeline H Kowalski<sup>†</sup>, Hans-Hermann Wessels<sup>†</sup>, Johannes Linder<sup>†</sup>, Johannes Linder, Carol Dalgarno, Isabella Mascio, **Saket Choudhary**, Austin Hartman, Yuhan Hao, Anshul Kundaje, Rahul Satija. *CPA-Perturb-seq: Multiplexed single-cell characterization of alternative polyadenylation regulators*. Cell (2024) [Online]

### As a Graduate Student:

4. **Saket Choudhary**<sup>†</sup>, Vasanthakrishna Mundodi<sup>†</sup>, Andrew D. Smith, and David Kadosh. *Genome-wide Translational Response of Candida albicans to Fluconazole Treatment*. Microbiology Spectrum (2023) [Online]
5. Mirella Baroni<sup>†</sup>, Caihong Yi<sup>†</sup>, **Saket Choudhary**<sup>†</sup>, Xiufen Lei, Adam Kosti, Denise Grieshober, Mitzli Velasco, Mei Qiao, Suzanne S Burns, Patricia R Araujo, Talia DeLambre, Mi Young Son, Michelina Plateroti, Marco AR Ferreira, E Paul Hasty, and Luiz O. Penalva. *Musashi1 Contribution to Glioblastoma Development via Regulation of a Network of DNA Replication, Cell Cycle and Division Genes*. Cancers (2021) [Online]
6. Vasanthakrishna Mundodi<sup>†</sup>, **Saket Choudhary**<sup>†</sup>, Andrew D. Smith, and David Kadosh. *Global Translational Landscape of the Candida albicans Morphological Transition*. G3 Genes| Genomes| Genetics (2020) [Online]
7. **Saket Choudhary**<sup>†</sup>, Wenzheng Li<sup>†</sup>, and Andrew D. Smith. *Accurate detection of short and long active ORFs using Ribo-seq data*. Bioinformatics (2019). [Online]
8. **Saket Choudhary**<sup>†</sup>, Suzanne C. Burns<sup>†</sup>, Hoda Mirsafian, Wenzheng Li, Dat T. Vo, Mei Qiao, Andrew D. Smith, and Luiz O. Penalva. *Genomic analyses of early responses to radiation in glioblastoma reveal new alterations at transcription, splicing, and translation levels*. Scientific Reports (2020) [Online]
9. **Saket Choudhary**. *pysradb: A Python package to query next-generation Sequencing metadata and data from NCBI sequence read archive*. F1000Research, vol. 8, F1000 (Faculty of 1000 Ltd), Apr. 2019, p. 532. [Online]

10. Juhye M. Lee, Rachel Eguia, Seth J. Zost, **Saket Choudhary**, Patrick C. Wilson, Trevor Bedford, Terry Stevens-Ayers, Michael Boeckh, Aeron Hurt, Seema S. Lakdawala, and Scott E. Hensley. *Mapping person-to-person variation in viral mutations that escape polyclonal serum targeting influenza hemagglutinin*. eLife (2019). [\[Online\]](#)
11. **Saket Choudhary**. *Golden-Thompson via pinching inequality*. arXiv:1811.00544 (2018). [\[Preprint\]](#)
12. Syed Asad Rahman, Gilliean Torrance, Lorenzo Baldacci, Sergio Martínez Cuesta, Franz Fenninger, Nimish Gopal, **Saket Choudhary**, John May, Gemma L. Holliday, Christoph Steinbeck and Janet M Thornton. *Reaction Decoder Tool (RDT): extracting features from chemical reactions*. Bioinformatics 32, no. 13 (2016): 2065-2066. [\[Online\]](#)
13. Björn Grüning, Ryan Dale, Andreas Sjödin *et al.* *Bioconda: sustainable and comprehensive software distribution for the life sciences*. Nature Methods, 15(7), 475. [\[Online\]](#)
14. **Saket Choudhary**, Leyla Garcia, Andrew Nightingale, and Maria-Jesus Martin. *BioJS-HGV Viewer: Genetic Variation Visualizer*. bioRxiv (2015): 032573. [\[Preprint\]](#)

As an Undergraduate Student:

15. Nikita Gahoi, Parvez Syed, **Saket Choudhary**, Sridhar Epari, Aliasgar Moiyadi, Santosh G Varma, Mayuri N Gandhi and Sanjeeva Srivastava. *A Protein Microarray-Based Investigation of Cerebrospinal Fluid Reveals Distinct Autoantibody Signature in Low and High-Grade Gliomas*. Frontiers in Oncology (2020) [\[Online\]](#)
16. Parvez Syed, Shabarni Gupta, **Saket Choudhary**, Narendra Goud Pandala, Apurva Atak, Annie Richaria, Manubhai KP, Heng Zhu, Sridhar Epari, Santosh B. Noronha, Aliasgar Moiyadi, and Sanjeeva Srivastava. *Autoantibody Profiling of Glioma Serum Samples to Identify Biomarkers Using Human Proteome Arrays* Scientific Reports 5 (2015), 13895. [\[Online\]](#)
17. Guy Yachdav, Tatyana Goldberg, Sebastian Wilzbach, David Dao, Iris Shih, **Saket Choudhary**, Steve Crouch *et al.* *Anatomy of BioJS, an open source community for the life sciences*. eLife 4 (2015): e07009. [\[Online\]](#)
18. **Saket Choudhary**, and Santosh B. Noronha. *GalDrive: Pipeline for comparative identification of driver mutations using the Galaxy framework*. bioRxiv (2014). [\[Preprint\]](#)
19. **Saket Choudhary**, Vishnu Raj, K. Sanmugasundaram, Gyan Singh Patel, and Kannan Moudgalya. *Scilab on Cloud and Textbook Companion Project: A Web 2.0 Service for Open Source Education*. In 2013 International Conference on Cloud Computing and Big Data. [\[Online\]](#)
20. Gatkine, Pradip, Swati Gatkine, Sushanth Poojary, **Saket Choudhary**, and Santosh Noronha. *Development of piezo-electric sensor based noninvasive low cost Arterial Pulse Analyzer*. In Biomedical Engineering International Conference (BMEiCON), 2013 6th, pp. 1-4. IEEE, 2013. [\[Online\]](#)
21. Dilip Save, Yogesh, R. Rakhi, N. D. Shambhulingayya, Amit Srivastava, Manas Ranjan Das, **Saket Choudhary**, and Kannan M. Moudgalya. *Oscad: An open source EDA tool for circuit design, simulation, analysis and PCB design*. In Electronics, Circuits, and Systems (ICECS), 2013 IEEE 20th International Conference on, pp. 851-854. IEEE, 2013. [\[Online\]](#)

TALKS/POSTERS

1. *Count models for normalization of single-cell RNA-seq data*, Single Cell Genomics Day 2021 [Talk]
2. *pysradb - A Python package for querying NCBI Sequence Read Archive*, ISMB/ECCB 2019 [Talk]
3. *BioJS-HGV: Human Genetic Variation Viewer*, USC-UCLA Joint Symposium 2015 [Talk]
4. *MoCA: A tool for Motif Conservation Analysis*, USC-MCB Retreat 2015 [Poster]
5. *A reference database and method for identifying actively translating ORFs from Ribo-seq data*, Biology of Genomes 2019 [Poster]

## SOFTWARE TOOLS

- **Saket Choudhary**, Christoph Hafemeister and Rahul Satija. "sctransform: R package for normalization and variance stabilization of single-cell RNA-seq data using regularized negative binomial regression" [[Github](#)]
- **Saket Choudhary** and Rahul Satija. "pysctransform: Python package for normalization and variance stabilization of single-cell RNA-seq data" [[Github](#)]
- **Saket Choudhary**, Wenzheng Li, and Andrew Smith, "ribotricker: Accurate detection of short and long active ORFs using Ribo-seq data." [[Github](#)]
- **Saket Choudhary**. "covmuller: R toolkit for estimation and visualization of COVID19 variants." [[Github](#)] | [[Website](#)]
- **Saket Choudhary**. "pysradb: Python package for retrieving metadata from SRA / ENA / GEO." [[Github](#)] | [[Website](#)]
- **Saket Choudhary**. "sklearn-hogsvd: Scikit-learn compatible Python implementation of higher order generalized singular value decomposition." [[Github](#)]
- **Saket Choudhary**. "pyseqlogo: Python package to plot sequence logos." [[Github](#)]
- **Saket Choudhary**. "rna-seq-snakemake: A collection of Snakemake scripts for performing RNA-seq analysis." [[Github](#)]
- **Saket Choudhary**. "gencode-regions: A collection of scripts to extract 5'UTR, 3'UTR, and other features from GTF files which are otherwise not readily available." [[Github](#)]
- **Saket Choudhary**. "pyvirchow: Utilities for digital pathology slide processing" [[Github](#)]

## TEACHING & MENTORING EXPERIENCE

- Instructor, Introduction to computational multi-omics ([Online](#)), IIT Bombay Fall 2024
- Mentor, CEGS ICA Program - NYGC Summer 2022
- Mentor, CEGS ICA Program - NYGC Summer 2021
- Teaching Assistant (TA):
  - Statistics for the Biological Sciences, USC Fall 2019 - Summer 2020
  - How the Body Works, USC (awarded **Outstanding TA** award) Fall 2016 - Spring 2019
  - Artificial Intelligence in Process Engineering, IITB Fall 2013
  - Computer Programming and Utilization, IITB Fall 2011