Romain Lopez

https://romain-lopez.github.io/
https://biologicalml.org/

New York University
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Academic Appointments

Sept 2025 – **Assistant Professor of Computer Science and Biology**
New York University, NY, USA
Primary Affiliations: Courant Institute for Mathematical Sciences, Computer Science Department & Faculty of Arts and Science, Biology Department.
Secondary Affiliations: NYU Center for Data Science
Head of the NYU Biological Machine Learning Group.

Aug 2021 – Sept 2025 **Postdoctoral Fellow**
Genentech Research & Early Development, South SF, USA
Stanford University School of Medicine, Palo Alto, USA
Hosted by Aviv Regev & Jonathan Pritchard. Designing causal inference frameworks from high-throughput screening data with single-cell readout.

Education

Aug 2016 –May 2021 **Ph.D. Electrical Engineering and Computer Sciences**
University of California, Berkeley, USA
Dissertation title: *Charting Cellular States, One Cell at a Time: Computational, Inferential and Modeling Perspectives* [PDF]
Affiliations: Berkeley Artificial Intelligence Research, Center for Computational Biology
Advisors: Michael I. Jordan & Nir Yosef
Additional committee members: Sandrine Dudoit & Jennifer Listgarten

Aug 2013 –Aug 2016 **Diplome d'Ingénieur; M.S. Applied Mathematics**
École polytechnique, Palaiseau, France
Affiliation: Centre de Mathématiques Appliquées
Advisors: Laurent Massoulié & Erwan Le Pennec

Awards & Fellowships

Professional Awards

2024 Best Paper Award (with Jayoung Ryu, Charlotte Bunne and Aviv Regev), for "Cross-modality Matching and Prediction of Perturbation Responses with Labeled Gromov-Wasserstein Optimal Transport" in ICML AI4Science Workshop.

2021 Best Paper Award Honorable Mention (with Inderjit Dhillon and Michael I. Jordan), for "Learning From eXtreme Bandit Feedback" in AAAI Conference on Artificial Intelligence.

2019 Best Student Poster Award (with Achille Nazaret) for "A Joint Model of Unpaired Data from scRNA-seq and Spatial Transcriptomics for Imputing Missing Gene Expression Measurements" in ICML Computational Biology Workshop.

Funding

2021 Key Personnel of an Essential Open Source Software for Science grant (PI: Nir Yosef). Awarded by the Chan-Zuckerberg Initiative in support for scvi-tools ($400k for two years).

2019 Travel award. NeurIPS Learning Meaningful Representations of Life Workshop.

2019 Amazon Web Service Cloud Credit for Research Award ($20k).

Fellowships

2016 UC Berkeley EECS Departmental Graduate Fellowship. Awarded by the William Oldham Fellowship Fund in Electrical Engineering and Computer Sciences.

2016 Monahan Foundation Fellowship (within the Fulbright-France network). Awarded to students of French scientific institutions to attend graduate school in the US.

2016 Carnot Foundation Fellowship, annually awarded to 2 students from École polytechnique for pursuing graduate studies in the US.

2011 Languedoc Roussillon Merit Fellowship. Awarded by the French territorial authority to highest honors graduating high-school students, and based on family income.

Service and other awards

2022 National Interest Waiver award: an immigrant visa that grants lawful US permanent residency to a foreign national with exceptional abilities for US national interest. Awarded by the US Immigration Services.

2015 Outstanding Investment Medal, École polytechnique. Awarded annually by the school authorities to 10% of students for their dedication to the student body.

2014 French National Defence Medal, Bronze Echelon. Awarded for public service, helping the young French overseas' population who face difficulties in building their future.

2011 Black belt (Shodan), French Judo Federation.

Publications

Star symbol (*) denotes equal contributions as a co-first or co-senior author.

Journal Articles

[J1] Pierre Boyeau, Jeffrey Regier, Adam Gayoso, Michael I. Jordan, **Romain Lopez***, and Nir Yosef*. "An empirical Bayes method for differential expression analysis of single cells with deep generative models". In: *Proceedings of the National Academy of Sciences* (2023). [PDF]

[J2] Isaac Virshup, Danila Bredikhin, Lukas Heumos, Giovanni Palla, Gregor Sturm, Adam Gayoso, Ilia Kats, Mikaela Koutrouli, **Scverse Community**, et al. "The scverse project provides a computational ecosystem for single-cell omics data analysis". In: *Nature Biotechnology* (2023). [PDF]

[J3] **Romain Lopez***, Baoguo Li*, Hadas Keren-Shaul*, Pierre Boyeau, Merav Kedmi, David Pilzer, Adam Jelinski, Ido Yofe, Eyal David, et al. "DestVI identifies continuums of cell types in spatial transcriptomics data". In: *Nature Biotechnology* (2022). [PDF]

[J4] Adam Gayoso*, **Romain Lopez***, Galen Xing*, Pierre Boyeau, Katherine Wu, Michael Jayasuriya, Edouard Mehlman, Maxime Langevin, Yining Liu, et al. "A Python library for probabilistic analysis of single-cell omics data". In: *Nature Biotechnology* (2022). Received an Essential Open Source Software for Science grant from CZI. [PDF]

[J5] Adam Gayoso*, Zoë Steier*, **Romain Lopez**, Jeffrey Regier, Kristopher L. Nazor, Aaron Streets, and Nir Yosef. "Joint probabilistic modeling of single-cell multiomic data with totalVI". In: *Nature Methods* (2021). [PDF]

[J6] Chenling Xu*, **Romain Lopez***, Edouard Mehlman*, Jeffrey Regier, Michael I. Jordan, and Nir Yosef. "Probabilistic harmonization and annotation of single-cell transcriptomics data with deep generative models". In: *Molecular Systems Biology* (2021). In the top 20 most downloaded papers of the journal in 2021. [PDF]

[J7] Samuel L. Wolock, **Romain Lopez**, and Allon M. Klein. "Scrublet: computational identification of cell doublets in single-cell transcriptomic data". In: *Cell Systems* (2019). [PDF]

[J8] **Romain Lopez**, Jeffrey Regier, Michael B. Cole, Michael I. Jordan, and Nir Yosef. "Deep generative modeling for single-cell transcriptomics". In: *Nature Methods* (2018). Presented in a News & Views section. Received a F1000 Exceptional recommendation. [PDF][N&V]

Articles in Highly Selective Conference Proceedings

[C1] Haiyi Mao, **Romain Lopez**, Kai Liu, Panayiotis V. Benos, and Lin Qiu. "Learning Identifiable Factorized Causal Representations of Cellular Responses". In: *Advances in Neural Information Processing Systems* (2024). [PDF].

[C2] Pouya M Ghari, Alex Tseng, Gökcen Eraslan, **Romain Lopez**, Tommaso Biancalani, Gabriele Scalia, and Ehsan Hajiramezanali. "Generative Flow Networks Assisted Biological Sequence Editing". In: *Advances in Neural Information Processing Systems* (2024). [PDF]. Also presented at the NeurIPS Workshop on Generative AI and Biology (2023).

[C3] **Romain Lopez**, Jan-Christian Huetter, Ehsan Hajiramezanali, Jonathan Pritchard, and Aviv Regev. "Toward the Identifiability of Comparative Deep Generative Models". In: *Causal Learning and Reasoning* (2024). [PDF]

[C4] Kexin Huang, **Romain Lopez**, Jan-Christian Hütter, Takamasa Kudo, Antonio Rios, and Aviv Regev. "Sequential optimal experimental design of perturbation screens guided by multi-modal priors". In: *Research in Computational Molecular Biology (RECOMB)* (2024). Also presented during an oral presentation at Machine Learning in Computational Biology (MLCB 2023). [PDF]

[C5] Muralikrishnna G. Sethuraman, **Romain Lopez**, Rahul Mohan, Faramarz Fekri, Tommaso Biancalani, and Jan-Christian Hütter. "NODAGS-Flow: Nonlinear cyclic causal structure learning". In: *International Conference on Artificial Intelligence and Statistics* (2023). [PDF]

[C6] **Romain Lopez***, Natasa Tagasovska*, Stephen Ra, Kyunghyun Cho, Jonathan K. Pritchard, and Aviv Regev. "Learning causal representations of single cells via sparse mechanism shift modeling". In: *Conference on Causal Learning and Reasoning* (2023). Also presented at the NeurIPS Workshop on Causality for Real-world Impact 2022. [PDF]

[C7] **Romain Lopez**, Jan-Christian Huetter, Jonathan K. Pritchard, and Aviv Regev. "Large-scale differentiable causal discovery of factor graphs". In: *Advances in Neural Information Processing Systems* (2022). [PDF]

[C8] **Romain Lopez**, Inderjit Dhillon, and Michael I. Jordan. "Learning from eXtreme bandit feedback". In: *AAAI Conference on Artificial Intelligence* (2021). Selected for a Best Paper Award Honorable Mention. [PDF]

[C9] **Romain Lopez**, Pierre Boyeau, Nir Yosef, Michael I. Jordan, and Jeffrey Regier. "Decision-making with auto-encoding variational Bayes". In: *Advances in Neural Information Processing Systems* (2020). [PDF]

[C10] **Romain Lopez**, Chenchen Li, Xiang Yan, Junwu Xiong, Michael I. Jordan, Yuan Qi, and Le Song. "Cost-effective incentive allocation via structured counterfactual inference". In: *AAAI Conference on Artificial Intelligence* (2020). [PDF]

[C11] **Romain Lopez**, Jeffrey Regier, Michael I. Jordan, and Nir Yosef. "Information constraints on auto-encoding variational Bayes". In: *Advances in Neural Information Processing Systems* (2018). [PDF]

Review Articles

[R1] **Romain Lopez**, Adam Gayoso, and Nir Yosef. "Enhancing scientific discoveries in molecular biology with deep generative models". In: *Molecular Systems Biology* (2020). [PDF]

Manuscripts in submission

[S1] Malte D Luecken, Scott Gigante, Daniel B Burkhardt, Robrecht Cannoodt, Daniel C Strobl, Nikolay S Markov, Luke Zappia, **The Open Problems Jamboree Members**, et al. "Defining and benchmarking open problems in single-cell analysis". In: *Research Square* (2024). [PDF]

Refereed Workshop Papers

[W1] Jayoung Ryu, Charlotte Bunne, Lucas Pinello, Aviv Regev*, and **Romain Lopez***. "Cross-modality Matching and Prediction of Perturbation Responses with Labeled Gromov-Wasserstein Optimal Transport". In: *Machine Learning in Computational Biology (MLCB)* (2024). [PDF]. Selected for an oral presentation at MLCB and for publication in the JMLR proceedings. Selected for an oral presentation and the Best Paper Award the ICML AI4Science workshop.

[W2] Mahtab Bigverdi, Burkhard Hockendorf, Heming Yao, Phil Hanslovsky, **Romain Lopez**, and David Richmond. "Gene-Level Representation Learning via Interventional Style Transfer in Optical Pooled Screening". In: *CVPR Workshop on Computer Vision for Microscopy Images* (2024). [PDF]

[W3] Zitong Jerry Wang, **Romain Lopez**, Jan-Christian Hütter, Takamasa Kudo, Heming Yao, Philipp Hanslovsky, Burkhard Höckendorf, and Aviv Regev. "Multi-ContrastiveVAE disentangles perturbation effects in single cell images from optical pooled screens". In: *ICLR Workshop on Machine Learning for Genomics Explorations* (2024). [PDF]

[W4] Xinming Tu, Jan-Christian Hutter, Zitong Jerry Wang, Takamasa Kudo, Aviv Regev, and **Romain Lopez**. "A Supervised Contrastive Framework for Learning Disentangled Representations of Cell Perturbation Data". In: *Machine Learning in Computational Biology (MLCB)* (2023). Selected for publication in the JMLR proceedings. [PDF]

[W5] Ethan Weinberger, **Romain Lopez**, Jan-Christian Hütter, and Aviv Regev. "Disentangling shared and group-specific variations in single-cell transcriptomics data with multiGroupVI". In: *Machine Learning in Computational Biology (MLCB)* (2022). Selected for an oral presentation, and for publication in the JMLR proceedings. [PDF]

[W6] Khalil Ouardini, **Romain Lopez**, Matthew G. Jones, Sebastian Prillo, Richard Zhang, Michael I. Jordan, and Nir Yosef. "Reconstructing unobserved cellular states from paired single-cell lineage tracing and transcriptomics data". In: *ICML Workshop in Computational Biology* (2021). Selected for a contributed talk award. [PDF]

[W7] Pierre Boyeau, **Romain Lopez**, Jeffrey Regier, Adam Gayoso, Michael I. Jordan, and Nir Yosef. "Deep generative models for detecting differential expression in single cells". In: *Machine Learning in Computational Biology (MLCB)* (2019). [PDF]

[W8] Oscar Clivio, **Romain Lopez**, Jeffrey Regier, Adam Gayoso, Michael I. Jordan, and Nir Yosef. "Detecting zero-inflated genes in single-cell transcriptomics data". In: *Machine Learning in Computational Biology (MLCB)* (2019). Selected for a spotlight talk. [PDF]

[W9] Adam Gayoso, **Romain Lopez**, Zoë Steier, Jeffrey Regier, Aaron Streets, and Nir Yosef. "A joint model of RNA expression and surface protein abundance in single cells". In: *Machine Learning in Computational Biology (MLCB)* (2019). [PDF]

[W10] **Romain Lopez***, Achille Nazaret*, Maxime Langevin*, Jules Samaran*, Jeffrey Regier*, Michael I. Jordan, and Nir Yosef. "A joint model of unpaired data from scRNA-seq and spatial transcriptomics for imputing missing gene expression measurements". In: *ICML Workshop in Computational Biology* (2019). Selected for a spotlight talk and a best student poster award. [PDF]

[W11] Maxime Langevin, Edouard Mehlman, Jeffrey Regier, **Romain Lopez**, Michael I. Jordan, and Nir Yosef. "A deep generative model for semi-supervised classification with noisy labels". In: *Bay Area Machine Learning Symposium* (2018). Selected for an oral presentation. [PDF]

[W12] **Romain Lopez**, Jeffrey Regier, Michael I. Jordan, and Nir Yosef. "A deep generative model for gene expression profiles from single-cell RNA sequencing with application to differential expression". In: *NeurIPS Machine Learning workshop in Computational Biology* (2017). Selected for a spotlight talk. [PDF]

[W13] **Romain Lopez**, Jeffrey Regier, Michael I. Jordan, and Nir Yosef. "A deep generative model for gene expression profiles from single-cell RNA sequencing". In: *Bay Area Machine Learning Symposium* (2017). Selected for an oral presentation. [PDF]

Presentations

Invited Keynotes

Dec 2021 NeurIPS Deep Generative Models and Downstream Applications Workshop, Keynote

Invited Seminars

Sept 2024 Stanford Computational Biology Seminar
Nov 2023 Broad Institute of MIT and Harvard, Models, Inference & Algorithms Seminar
May 2023 IBM Research Zürich, Artificial Intelligence for Scientific Discovery Seminar
Sept 2022 EPFL, School of Life Sciences Seminar
June 2022 Stanford Statistics Seminar
Jan 2022 Microsoft Research New England, Machine Learning Seminar
Sept 2021 Walter and Eliza Hall Institute of Medical Research, Machine Learning Group, Seminar
Nov 2020 Delft University of Technology, Bioinformatics Seminar
Nov 2019 Broad Institute of MIT and Harvard, Models, Inference & Algorithms Special Seminar

Nov 2019	Dana Farber Cancer Institute, Data Science Departmental Seminar
Nov 2019	Pfizer, Machine Learning Seminar
Oct 2019	Google Brain Paris, Seminar

Other Invited Talks

July 2023	Human Cell Atlas General Meeting, Lightning Talk
Dec 2022	Owkin, Research Presentation
Oct 2022	Chugai Pharmaceutical Research, Research Presentation
Sept 2022	Roche Pharma Research and Early Development (pRED), Research Presentation
April 2021	PyData, AI *&* Single-cell Genomics, Immunai Special Meeting
Dec 2020	Genentech Research and Early Development (gRED), Seminar
May 2020	Amazon, Machine Learning Search Team, Research Presentation
Feb 2020	10x Genomics, Journal Club
Nov 2019	Chan Zuckerberg Initiative *&* NY Genome Center, Normalization Workshop
Nov 2019	Celsius Therapeutics, Seminar
March 2019	Deep Learning for Biomedicine conference, UCSF, Guest Speaker
Feb 2017	Two Sigma Investments, Guest Speaker

Contributed Talks

Sept 2024	Machine Learning on Computational Biology, Oral Presentation
Nov 2020	Seed Networks Annual Meeting, Chan Zuckerberg Initiative, Software Demonstration
Oct 2019	Beyond the Cell Atlas Meeting, Lightning Talk
June 2019	ICML workshop in Computational Biology, Lightning Talk
Oct 2018	Northern California Computational Biology Symposium, Oral Presentation
Dec 2017	NeurIPS Machine Learning workshop in Computational Biology, Lightning Talk
Oct 2017	Northern California Computational Biology Symposium, Oral Presentation
Oct 2017	Bay Area Machine Learning Symposium, Oral Presentation

Group Meetings

Nov 2022	Causality Group @ Mila – Quebec Artificial Intelligence Institute
July 2021	BEEHIVE (B. Engelhardt) @ Princeton
May 2021	Marks Lab @ Harvard Medical School
April 2021	Kundaje Lab @ Stanford University
March 2021	Amit Lab @ Weizmann Institute of Science
Dec 2020	Pritchard Lab @ Stanford University
Oct 2020	Battle Lab @ Johns Hopkins University

Oct 2020	Morris Lab @ Memorial Sloan Kettering Cancer Center
July 2020	Applied Bayesian Group (J. Regier) @ University of Michigan
Nov 2019	Regev Lab @ Broad Institute of MIT and Harvard
Sept 2018	Biostatistics Lab (Dudoit, Purdom) @ UC Berkeley

Posters

Sept 2024	Single-cell Genomics conference
Apr 2024	Conference on Causal Learning and Reasoning
Apr 2023	Conference on Causal Learning and Reasoning
Dec 2022	NeurIPS Workshop on Causality for Real-world Impact
Dec 2022	Advances in Neural Information Processing Systems
Oct 2022	Single-cell Genomics conference
July 2021	ICML Workshop in Computational Biology
Jan 2021	AAAI Conference in Artificial Intelligence
Dec 2020	Advances in Neural Information Processing Systems
Feb 2020	AAAI Conference in Artificial Intelligence
Dec 2019	NeurIPS Workshop on Learning Meaningful Representations of Life
Dec 2019	Machine Learning in Computational Biology meeting
Oct 2019	Probabilistic Modeling In Genomics
Sept 2019	Single-cell Genomics conference
Jun 2019	ICML Workshop in Computational Biology
Jun 2019	UC-wide AI in Biomedicine Symposium
Dec 2018	Advances in Neural Information Processing Systems
Oct 2018	Single-cell Genomics conference
March 2018	Single-cell Biology conference
Dec 2017	NeurIPS Machine Learning workshop in Computational Biology

Teaching & Mentoring Experience

2017 - 2024 **Guest Lectures**

Stanford, *Deep Learning for Genomics and Biomedicine* (CS273B, Spring 2023, Spring 2024)
Caltech, *Representation Learning for Science* (CS159, Spring 2022)
MIT, *Deep Learning in the Life Sciences* (6.874, Spring 2021)
Yale University, *Deep Learning Theory and Applications*, (CPSC663, Spring 2020)
UC Berkeley, *Machine Learning and Statistics meet Biology*, (CS294, Spring 2017)

May 2022 – Feb 2024 **Machine Learning Working Group**, *Genentech, South San Francisco*, *Visiting Student Recruiting & Mentoring.*

Recruitment and mentoring of 10 Ph.D. students visiting Genentech for a summer research internship (10 weeks). The team's work resulted in 5 peer-reviewed publications and 1 best paper award from the ICML workshop in AI for Science.

Ethan Weinberger (2022), from University of Washington.
Tara Chari (2022), from California Institute of Technology.
Rebecca Boiarsky (2023), from MIT.
Xinming Tu (2023), from University of Washington.
Kexin Huang (2023), from Stanford.
Zitong Wang (2023), from California Institute of Technology.
Jayoung Ryu[†] (2024), from Harvard University.
Taro Makino (2024), from New York University.
Martin Rohbeck (2024), from EMBL Heidelberg.
Yichen Gu (2024), from University of Michigan.

[†] Best Paper Award. ICML Workshop in AI for Science, 2024.

May 2018 –May 2021 SINGLE-CELL VARIATIONAL INFERENCE TEAM, *University of California, Berkeley*, *Visiting Student Recruiting & Mentoring.*
Recruitment and mentoring of 7 master's students and 2 undergraduate students visiting the Yosef Lab while working on their thesis (full-time five-month internships). Designed screening exams, conducted interviews, provided projects and organized regular working group with students.

The team's work resulted in 7 peer-reviewed publications, 2 outstanding research internship award from École polytechnique, 1 best student poster award at ICML WCB 2019 and 1 contributed talk award at ICML WCB 2021. 6 students accepted PhD positions in computer science departments of top academic institutions (including ENS Paris, UC Berkeley, Columbia and Oxford university).

Maxime Langevin[†] (2018), then *PhD student* @ ENS, Paris and Sanofi.
Edouard Mehlman (2018), then *Data Scientist* @ Feedly.
Yining Liu (2018), then *PhD student* @ Columbia University, CS.
Jules Samaran (2018), then *PhD student* @ ENS Paris.
Achille Nazaret[†,‡] (2019), then *PhD student* @ Columbia University, CS.
Oscar Clivio (2019), then *PhD student* @ Oxford University, Stats.
Gabriel Misrachi (2019), then *Data Scientist* @ Gleamer.
Pierre Boyeau (2019), then *PhD student* @ UC Berkeley, EECS.
Khalil Ouardini (2020)[+], then *MSc student* @ ENS Cachan, MVA.

[†] Best Research Award from École polytechnique for their internship work.
[‡] Best Student Poster Award. ICML Workshop in Computational Biology, 2019.
[+] Contributed Talk Award. ICML Workshop in Computational Biology, 2021.

Spring 2019 – Fall 2019 ELECTRICAL ENGINEERING 127 / 227A, *University of California, Berkeley*
Advanced undergraduate and graduate course in convex optimization (250 students).

Head Graduate Student Instructor (Fall 2019).
Graduate Student Instructor (Spring 2019).

Visiting Academic Appointments

Oct 2022 — Osaka University, *Visiting Research Fellow*, Osaka, Japan
Hosted by Shimon Sakaguchi and Kelvin Chen. Exploration of chemical perturbation assays applied to T cells with a computational angle.

Feb 2020 — Weizmann Institute of Science, *Visiting Research Fellow*, Rehovot, Israel
Hosted by Ido Amit. Exploration of spatial transcriptomics technologies with a computational angle. Research paper on multi-resolution deconvolution of 10x Visium data, applied to murine lymph nodes and mouse tumor models (DestVI).

April 2016 –Aug 2016 — Harvard Medical School, *Visiting Research Scholar*, Boston, USA
Hosted by Allon Klein. Understanding cell fate decisions based on statistical methods for analyzing single-cell RNA sequencing data. Research paper on doublet detection for single-cell transcriptomics data (Scrublet).

Industry Experience

Aug 2021 – Sept 2025 — Genentech Research & Early Development *Postdoctoral Fellow*, South SF, USA
Hosted by Aviv Regev. Designing causal inference frameworks from high-throughput screening data with single-cell readout.

Sept 2019 –Apr 2020 — Amazon, *Applied Scientist Intern*, Berkeley, USA.
Hosted by Inderjit Dhillon. Research paper on counterfactual inference with extremely large action spaces. Application to search algorithms for Amazon online platform.

June 2018 –Aug 2018 — Ant Financial, *Research-based Software Engineer Intern*, Hangzhou, China.
Hosted by Le Song. Research paper on counterfactual inference for estimating responses to economical incentives. Application to efficient coupon allocation for mobile marketing campaigns.

Aug 2017 –Jan 2018 — Codi (formerly Hiven), *Entrepreneurship project*, UC Berkeley, USA.
Customer discovery and prototype at early stage of the company. Codi connects remote workers with home-based workspaces right in their neighborhood. The company raised $7M in 2020.

Sept 2015 –Feb 2016 — Cardiologs, *Data Scientist Intern*, Paris, France.
Hosted by Jia Li, Co-founder & CSO. Cardiologs develops a FDA-cleared AI based EKG analysis software and got acquired by Phillips in 2021. Reconstructed EKGs 3D signal

from a 2D projection using convolutional neural networks.

June 2015 –Aug 2015 AXA Life Japan, *Actuarial Intern,* Tokyo, Japan.
Hosted by Takashi Nojima, Head of Pricing and Product development. AXA Life Japan was the second most important subsidiary of AXA group regarding medical insurance in 2015. Predictive modeling, pricing sheets, stress tests and technical reports.

Professional Service

Workshop Organization Committee Membership

NeurIPS Workshop on Learning Meaningful Representations of Life (LMRL) 2021, 2022

Machine Learning Competition Jury Membership

Open Problems – Single-Cell Perturbations 2023

Grant Reviewing

Chan Zuckerberg Initiative Single-cell Data Insights, 2022, 2024

Journal, Conference & Workshop Reviewing

Science, 2022– (1 paper)
Nature Biotechnology, 2022– (3 papers)
Foundations and Trends in Machine Learning, 2021– (1 paper)
Nature Review Genetics, 2021– (1 paper)
Science Advances, 2020– (1 paper)
Bioinformatics, 2020– (1 paper)
Nature Methods, 2020– (1 paper)

International Conference on Artificial Intelligence and Statistics (AISTATS), 2022, 2025
AAAI Conference on Artificial Intelligence (AAAI), 2021, 2025
International Conference on Learning Representations (ICLR), 2021, 2023, 2024
Neural Information Processing Systems (NeurIPS), 2019, 2020, 2021, 2023, 2024
International Conference on Machine Learning (ICML), 2019, 2021

ICML Workshop in Computational Biology (WCB), 2020, 2022, 2023
ICLR Workshop on Machine Learning for Genomics Explorations, (MLGenX) 2024
Machine Learning in Computational Biology (MLCB), 2019, 2020, 2021

Leadership & Outreach

Nov 2021 –May 2022 Promoting inclusivity in Computing, SFSU & Genentech, *Course Contributor.*
Diverse feedback and contributions on the coursework materials designed for San Fran-

cisco State University's undergraduate Certificate in Data Science and Machine Learning for Biotechnology.

Oct 2019 –Aug 2020 — Diversifying Access to Research in Engineering, UC Berkeley, *Student Mentor.*
Provide undergraduate students from under-represented background with research opportunities in electrical engineering and computer science to promote diversity.

Sept 2017 –Aug 2019 — French Alumni Berkeley, *Founder.*
Connecting Berkeley students that share a part of their education in France with Alumni. Organized monthly meetings with startups in San Francisco, bi-monthly networking events on campus. Collaboration with the French consulate, industry and diverse associations.

March 2015 — French Tournament of Young Mathématiciennes et Mathématiciens, *Member of the Final Jury.*
Participated as a jury member of the finale for the national mathematics tournament for high school students, hosted by École polytechnique.

Oct 2014 –Jul 2015 — Freshman Weekend of École polytechnique, *Treasurer & Vice-President.*
In charge of the $160k budget and co-organising the event for 600 students.

Oct 2013 –Apr 2014 — French Ministry of Defence, *Officer Cadet, Reunion Island, Indian Ocean.*
Military training for underprivileged youth towards the job market. Supervised the military recruit training of thirty people and their five supervisors.

2008 – 2011 — Judo Club, *Montpellier Area, France.*
Participated in national level Judo tournaments and trained young judokas: awarded black belt at the age of fourteen. Released an open source Judo scoreboard software to empower youth to refereeing. Prepared a computer park to be used for educational purposes during a humanitarian mission during twenty days in Senegal with my Judo Club.

Media Coverage

Press

"The convergence of deep neural networks and immunotherapy". In: *Tech Crunch* (January 2022).

"CZI awards $16 million for foundational open source software tools essential to biomedicine". In: *Chan Zuckerberg Initiative Newsroom* (August 2021).

"Two Amazon papers were runners-up for best-paper awards at AAAI". In: *Amazon Science* (March 2021).

"Bayesian deep learning for single-cell analysis". In: *Nature Methods* (Nov 2018).

Podcasts

"scVI with Romain Lopez and Gabriel Misrachi". In: *The Bioinformatics Chat* (Sept 2019).

Blog posts

"Experiments with scVI". In: *Saket Choudhary's personal blog* (Dec 2020).

"Integrating scRNA-seq and spatial STARmap data from mouse frontal cortex with scVI". In: *What Do You Mean "Heterogeneity"?* (Oct 2018).

"Count based autoencoders and the future for scRNA-seq analysis". In: *What Do You Mean "Heterogeneity"?* (Apr 2018).

Co-Authored Blog posts

"Behind the paper: DestVI identifies continuums of cell types in spatial transcriptomics data". In: *Nature Portfolio Bioengineering* (Apr 2022).

"Hyperparameter search for scVI". In: *YosefLab Blog* (July 2019).

"Should we zero-inflate scVI?" In: *YosefLab Blog* (June 2019).

"Building gene expression atlases with deep generative models for single-cell transcriptomics". In: *Berkeley Artificial Intelligence Research Blog* (Dec 2018).