

TANMAY TANNA.

SENIOR RESEARCHER - COMPUTATIONAL BIOLOGY x MACHINE LEARNING

ETH D-BSSE / D-INFK / ETH AI CENTER · SINGLE-CELL / PERTURB-SEQ / MULTI-OMICS

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Google Scholar

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PROFILE

Senior computational biologist and machine-learning researcher at ETH Zürich focused on **single-cell modelling and multi-omics**. Co-first author in **Science**, first author in **Nature Protocols** and co-inventor on Record-seq IP. I lead computational strategy, method development and mentoring across D-BSSE, D-INFK and the ETH AI Center.

02

EXPERIENCE

2026.02 - NOW
BASEL / ZÜRICH, CH

Senior Researcher (Oberassistent)

ETH Zürich, D-BSSE | Platt Lab · ETH AI Center affiliate · Prof. Gunnar Rätsch, D-INFK

- Lead computational and ML work for a CZI/Biohub-funded program generating genome-scale in vivo Perturb-seq data in mouse cortex, multiple organs and microglia.
- Develop representation-learning, probabilistic-inference and response-prediction methods for heterogeneous single-cell data; coordinate analysis strategy and mentor MSc/PhD researchers.

2024.06 - 2026.02
BASEL / ZÜRICH, CH

Postdoctoral Researcher

ETH Zürich - D-BSSE / Department of Computer Science

- Co-developed successful CZI/Biohub proposal, established computational foundations for genome-scale in vivo screens, and co-led perturbation-aware representation-learning work presented at NeurIPS AI4D3.

2020 - 2024
BASEL / ZÜRICH, CH

Doctoral Researcher - Computational Biology

ETH Zürich - D-BSSE & D-INFK | Profs. Randall Platt and Gunnar Rätsch

- Computational lead for Record-seq, Tumor Profiler melanoma multi-omics and single-cell glycomics; led metagenomics/metabolomics analysis for a late-stage melanoma cohort.
- Co-developed metabolomics and de Bruijn graph methods; contributed to successful Botnar, ERC and Krebsliga proposals; co-first author in Science and Record-seq co-inventor.

2019.01 - 2020.01
BASEL, CH

Research Associate & Co-founder, Record Health (pre-incorporation)

ETH Zürich - D-BSSE

- Advanced Record-seq while building the scientific and commercial foundations for an early venture concept through entrepreneurship programs, Swiss ecosystem engagement and technical/regulatory assessment.

03

EDUCATION

2020 - 2024 · ETH ZÜRICH

PhD

D-BSSE & D-INFK

Joint computational biology research across biosystems engineering and computer science.

2016 - 2018 · ETH ZÜRICH

MSc Biology

Molecular Health Sciences

Inlaks Scholar · Record-seq analysis and pipeline thesis.

2011 - 2015 · NIT WARANGAL

BTech Biotechnology

Merit Scholar

Merit Scholar · Erasmus Mundus exchange · University of Tokyo research grant.

CORE STACK
HIGHLIGHTED

COMPUTATIONAL BIOLOGY

SINGLE-CELL RNA-SEQ	PERTURB-SEQ	CRISPR SCREENS	MULTI-OMICS	METAGENOMICS	METABOLOMICS
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PYTORCH	JAX	REPRESENTATION LEARNING	PROBABILISTIC MODELS	DIFFERENTIAL TESTING
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PYTHON	R	BASH	RUST (BASIC)	SLURM / HPC	GIT	CONDA	BIOCONDUCTOR	DOCKER
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REACT	VERCEL	SUPABASE	R / PYTHON VIS	ILLUSTRATOR	LATEX
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2026

“An end-to-end computational framework for ‘Record-seq’ transcriptional recording data”
Co-first & corresponding author · *Bioinformatics*, in press · end-to-end workflow, R package, sequence models and ~30x faster extraction.

2025 - 2026

“Perturbation-aware representation learning for heterogeneous single-cell genetic screens”

Co-first author · NeurIPS AI4D3 2025; expanded manuscript under review · uncertain guide labels, weak effects and genome-scale screens.

2022

“Noninvasive assessment of gut function using transcriptional recording sentinel cells”

Co-first author; computational lead • *Science* 376:eabm6038.

2020

“Recording transcriptional histories using Record-seq”

First author · *Nature Protocols* 15:513-539.

2023 / CURRENT

WO2023209153A1 - transcriptionally recording cell composition and non-invasive assessment of gut function

Co-inventor · ETH Zürich / University of Bern. Co-leading two genome-scale in vivo Perturb-seq manuscripts; additional work in *Nature Medicine*, *Nature Machine Intelligence* and precision-oncology journals.

LEADERSHIP & RECOGNITION

- Computational lead/contributor on successful Botnar, ERC, Krebsliga and CZI/Biohub proposals spanning a multi-million research portfolio.
- Supervised 7 MSc and 2 BSc students; co-supervised 1 PhD. TA for Genome Engineering and Topics in Medical Machine Learning.
- Pro-bono strategy consultant, ETH Graduate Consulting Club; ETH Entrepreneur Club web-development team (2022-2023).

- **St. Gallen Symposium Academic Judge & Leader of Tomorrow, 2022-2025.**
- **Swiss Gastroenterology Society Prize and DBMR Best Publication Award, 2023.**
- **Inlaks, Erasmus Mundus, University of Tokyo and NIT merit scholarships, 2011-2018.**
- **CFA Level I passed (2024); Level II candidate, August 2026.**

LANGUAGES

LANGUAGES & DETAILS

ENGLISH

NATIVE



NATIONALITY

Indian

HINDI

NATIVE



WORK AUTHORIZATION

Swiss work-authorized;
family-reunification
permit in process

GUJARATI

NATIVE



BASED IN

Zürich, Switzerland

GERMAN

B1 - WORKING



MOBILITY

Open to global relocation