HANCHEN WANG

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EDUCATION & TRAINING

2023 – Present **Genentech** & **Stanford University** Postdoc, *w/* Aviv Regev & Jure Leskovec
Cellular & tissue biology, LLM agents, Cancer & Autoimmune therapeutics.

2019 – 2022 **University of Cambridge** Ph.D., Computer Science, *w/* Joan Lasenby
Pre-training; Distribution system; Graph learning on molecular data.

2014 – 2018 **Nanjing University** B.S., Physics, Honors Program
Protein folding dynamics; Solid state Physics in solar cells & semi-conductors.

RESEARCH ACCOMPLISHMENT

I have authored 29 papers, including first-author work in *Nature* [J8], *Nature Biotechnology* [J10], *Nature Machine Intelligence* [J6], and *NeurIPS* [C2, C3, C8]. My co-led projects are deployed or reported by *Anthropic*, *Amazon Web Services*, *Genentech*, *10x Genomics*, and many others, and integrated into the *scikit-learn* and *sc-verse* ecosystems. My work received oral, spotlight presentations and travel awards at conferences, with coverage in *The Economist*, *Nature*, *DeepMind*, *Stanford Engineering*, *Cambridge Engineering*, *Harvard Medical School* and *healthcare-in-europe*. My recent co-led projects are under revision or review at *Nature* [J12, J15, J16], *Science* [J13], and *Nature Machine Intelligence* [J11].

I lead funded research as PI (Genentech, $800k; OpenAI Researcher Access Program, $10k; Cambridge CAPE Student Grant, £2k) and field service (*ad hoc* grant reviewer for NSF TIP sector, 2025; area chair for ICLR 2026; symposium and workshop organizer at AAAI, ICLR, NeurIPS, and ICML). I mentor 10 BS, MS and PhD students in cs and biomedical majors from Stanford, MIT, Harvard, Rockefeller, KAIST, CSHL, and HKU; many have first-author papers and new placements, including postdocs at Harvard, Broad Institute; an assistant professor at UIUC CS; and industry roles at Meta and startups.

AWARDS & HONORS

2025	Forbes 30 Under 30 Science (Global) - Shortlist *(final notice is pending)*
2024	OpenAI Researcher Access Program
2019, 2021, 2022	Travel Awards from NeurIPS; IEEE ICASSP; and Cambridge Philosophy Society
2018	Cambridge Trust Fellowship; Kathy Xu Scholarship, University of Cambridge
2018	*Summa Cum Laude*; Commencement Speaker, Nanjing University
2017	Meritorious Winner, Mathematical Contest in Modeling (MCM/ICM)
2015	National Level-3 Athlete (400 m, Track & Field)
2013	2nd Prize in National Olympiads of Physics
2013	2nd Prize in National Olympiads of Biology

PUBLICATION (SELECTED) * co-first, # co-correspondence

[J15] - *in submission*
Abbas Nazir*, **Hanchen Wang***, Ziyu Lu*, Jeff Lau, Frank Peale, *et al.*, Nikhil S. Joshi, Levi A. Garraway, and Aviv Regev# — **Spatiotemporal Profiling Reveals the Role of Inflammatory Niche in Driving Prostate Cancer**.

[J13] bioRxiv '25 - *in revision, Science*
Kexin Huang*#, Serena Zhang*, **Hanchen Wang***, Yuanhao Qu*, Yingzhou Lu*, *et al.*, Michael Snyder, Le Cong, Aviv Regev, and Jure Leskovec# — **Biomni: A General-Purpose Biomedical AI Agent**.

[J12] bioRxiv '25 - *in revision, Nature*
Hanchen Wang*#, Yichun He*, Paula P. Coelho*, Matthew Bucci*, Abbas Nazir*, Bob Chen, *et al.*, Orit Rozenblatt-Rosen, Jure Leskovec, and Aviv Regev# — **SpatialAgent: An Autonomous AI Agent for Spatial Biology**.

[J10] Nature Biotech. '25
Hanchen Wang, Jure Leskovec#, and Aviv Regev# **Limitations of Cell Embedding Metrics Assessed using Drifting Islands**.

[J8] Nature '23
Hanchen Wang*, Tianfan Fu*, Yuanqi Du*, *et al.*, Petar Veličković, Max Welling, Linfeng Zhang, Connor Coley, Yoshua Bengio, and Marinka Zitnik# — **Scientific Discovery in the Age of AI**.

[J6] Nature Machine Intelligence '21
Xiang Bai*#, **Hanchen Wang***, Liya Ma*, Yongchao Xu*, Jiefeng Gan*, *et al.*, Chuansheng Zheng, Jianming Wang, Zhen Li, Carola Schönlieb#, and Tian Xia# — **Advancing COVID-19 Diagnosis with Privacy-Preserving Collab. in AI**.

[C13] - *soon arXiv*
Shuvom Sadhuka, *et al.*, Bonnie Berger, Aviv Regev, and **Hanchen Wang**# — **E-valuator: Improving LLM Verifier with Sequential Hypothesis Testing**.

[C10] ICLR '25
Chenyu Wang*, Masatoshi Uehara*, *et al.*, Tommi Jaakkola#, Sergey Levine#, **Hanchen Wang**#, Aviv Regev# — **Fine-Tuning Discrete Diffusion Models via Reward Optimization with Applications to DNA and Protein Design**.

[C8] NeurIPS '23
Hanchen Wang*, Jean Kaddour*, *et al.*, Jian Tang, Joan Lasenby, and Qi Liu — **Evaluating Self-Supervised Learning for Molecular Graph Embeddings**.

[C5] ICLR '22
Shengchao Liu, **Hanchen Wang**, *et al.*, Joan Lasenby, Hongyu Guo, Jian Tang — **Pre-training Molecular Graph Representation with 3D Geometry**.

[C4] ICCV '21
Hanchen Wang, Qi Liu, Xiangyu Yue, Joan Lasenby, and Matthew J. Kusner — **Unsupervised Point Cloud Pre-training via Occlusion Completion**.

[C3] NeurIPS '21
Weiyang Liu*, Zhen Liu*, **Hanchen Wang***, Liam Paull, Bernhard Scholkopf, and Adrian Weller — **Iterative Teaching by Label Synthesis**.

TEACHING

2024	Guest Lecturer, Stanford Bio 114: Building Up Developing Scientists - Topic: Biomedical Discovery with AI Agent
2021	Teaching Assistant, University of Cambridge, 3F8: Statistical Inference - Content: linear estimation, stochastic process, auto-regression, Kalman filter
2019	Teaching Assistant, University of Cambridge, 3F3: Statistical Signal Processing - Content: Bayesian inference, Monte Carlo methods, Markov models
2019	Demonstrator, University of Cambridge: Lab on Spectrum Analysis - Content: Fourier transforms, FFT, power spectra, harmonics.

INVITED TALKS

2025	Stanford Graph Learning Workshop
2025	Broad Institute of Harvard and MIT, *hosted by Caroline Uhler*
2025	Cold Spring Harbor Laboratory
2025	Weill Cornell Medicine, *hosted by Fei Wang*
2025	Agentic AI Summit, UC Berkeley
2025	Stanford University, *hosted by Ruijiang Li*
2025	University of Pennsylvania, *hosted by Zhi Huang*
2025	Danaher Corporation, *hosted by Luciano A. Guerreiro*
2025	University of California, Los Angeles, *hosted by Yizhou Sun*
2025	Roche, *hosted by Alberto Valdeolivas Urbelz*
2025	Nature Publishing Group, *hosted by Qian Cheng and Antonio Fornieri*
2025	10x Genomics, *hosted by Roger Zhu and Dylan Webster*
2025	NIH / NCI, *hosted by Eytan Ruppin*
2025	Harvard University and GESTALT, *hosted by Ioannis Vlachos and Jiwoon Park*
2025	AAAI Spring Symposium
2024	Yale University, *hosted by Hongyu Zhao*
2024	Princeton University, *hosted by Mengdi Wang*
2023	Stanford University, *hosted by Jure Leskovec*
2023	Tsinghua University, *hosted by Ji Wu*
2023	Westlake University, *hosted by Tailin Wu*
2023	Cambridge Machine Learning Group, *hosted by José Miguel Hernández-Lobato*
2023	Wellcome Sanger Institute; EMBL-EBI, *hosted by John Marioni*
2022	Genentech, *hosted by Aviv Regev*
2022	Lennard-Jones Centre, University of Cambridge, *hosted by Stephen Cox*
2022	ML/NLP Seminar, University of Oxford, *hosted by Phil Blunsom*
2021	Amazon Machine Learning Conference
2021	Amazon–UCL Seminar, *hosted by Emine Yilmaz*
2018	Awardee Representative Speech, Cathy Xu Scholarship Awarding Ceremony
2018	Commencement Speech, KYM Honors School, Nanjing University

FUNDING & GRANTS

In addition, I contributed to my advisors' proposals for the NSF AI Institute (2023, Awarded), Stanford HAI Hoffman–Yee Award (2024; Awarded), and CRUK Cancer Grand Challenge (2025, Ongoing).

2024	Genentech Fund ($150k/year for computation, $250k/year for hiring, 2 years), PI
2024	OpenAI Researcher Access Program ($10k), PI
2020	Cambridge CAPE Student Grant (£2k), PI

MENTORING

2025	Jordan Rossen, PhD in Genetics, Harvard University
2025	Namkyeong Lee, PhD in CS, Korea Advanced Institute of Science & Technology
2025	Sessen Iohannes, PhD in Biology, Cold Spring Harbor Laboratory
2025	Chang Ma, PhD in CS, Hong Kong University
2025	Ziyu Lu, PhD in Computational Biology, Rockefeller University
2025	Shuvom Sadhuka, PhD in EECS, MIT CSAIL
2025	Serena Zhang, BS & MS in CS, Stanford University
2024	Yichun He, PhD in Bioengineering, Harvard University
2024	Chenyu (Monica) Wang, PhD in EECS, MIT CSAIL
2023	Nikil Ravi, MS in CS, Stanford University

ACADEMIC SERVICE

Editorial

Area Chair	ICLR '26

Reviewer

Advisor	Machine Learning for Healthcare (ML4H) and Nature Communications
Conference	ICLR, ICML, NeurIPS, ISMB, CVPR, AISTATS, KDD, AAAI *etc*
Grant	NSF TIE Sector (*Ad Hoc*) '25
Journal	Nature Biotechnology, Nature Methods, Nature Machine Intelligence, Nature Electronics, Nature Communications, IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), Harvard Data Science Review, *etc*
Event Proposal	NeurIPS workshops '21, '23, '24, '25
Textbook	Springer Nature (on Immunology, Reproductive Medicine)

Organizer

Symposium	AI Agents and Scientific Discovery, AAAI '25
Workshop	ML for Material Discovery, ICLR '23; AI for Science, NeurIPS '21, '22, ICML '22

Member

2024-Now	Pipeline Club, Genentech
2023-Now	Data Integration Team, Human Cell Atlas

2025	Trainee-to-Tenure Track Program, UCSF Gladstone Institute
2024	Faculty Applicant Bootcamp, Chan Zuckerberg Initiative
2023-2024	Virtual Cell Team & AI Resident, Chan Zuckerberg Initiative

EQUITY COMMITMENT

2025 **Mentor**, UC Davis "Becoming a Latino Scientist" Program: delivered a seminar and joined campus visits; shared pathways into research and industry; emphasized open-science (reproducible workflows, version-controlled codes, preprints); offered advice on projects, internships, and graduate applications.

2024 **Volunteer**, San Francisco State University (SFSU) Data Science and Machine Learning (ML) Certificate: led biweekly sessions and office hours on practical ML pipelines for biomedicine; provided detailed, actionable feedback on assignments and capstones; coached job-search strategy and interviews.

WORK EXPERIENCE

2022	**Iambic**, Research Intern, with Matt Welborn	La Jolla, CA, US
2022	**BioMap**, Research Intern, with Le Song	Beijing, China
2021	**Amazon**, Research Intern, with Emine Yilmaz	London, UK
2020	**Google**, Software Engineering Intern	Mountain View, CA, US
2018	**Cantab Care**, Co-founder and CTO	UK / China
2018	**CICC**, Analyst, with Haiyang Zheng	Shanghai, China

REFERENCE

Aviv Regev
Head & Executive Vice President, Research & Early Development
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Jure Leskovec
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Stanford University
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Joan Lasenby
Professor of Image and Signal Analysis
Department of Engineering (Information Engineering Division)
University of Cambridge
jl@eng.cam.ac.uk

PUBLICATION (FULL) * co-first # co-correspondence

- JOURNAL ARTICLES

[J16] Kejun Ying*, Alexander Tyshkovskiy, Alibek Moldakozhayev, **Hanchen Wang***, *et al.*, Alex Zhavoronkov, Le Cong, Aviv Regev, Jure Leskovec, Tony Wyss-Coray, and Vadim N. Gladyshev — **Massive Mining of Aging-Modifying Interventions from Millions of Molecular Profiles Using Agentic AI**. *In submission.*

[J15] Abbas Nazir*, **Hanchen Wang***, Ziyu Lu*, Jeff Lau, Frank Peale, Bence Daniel, Kelli A. Connolly, *et al.*, Nikhil S. Joshi, Levi A. Garraway, and Aviv Regev# — **Spatiotemporal Profiling Reveals the Role of Inflammatory Niche in Driving Prostate Cancer**. *In submission.*

[J14] Yuanhao Qu, Jingwen Hui, *et al.*, Russ Altman, Jure Leskovec, Aviv Regev, Mengdi Wang, Le Cong# — **AutoScreen: An Agentic System for Target Discovery in Functional Genomics**. *In submission.*

[J13] Kexin Huang*, Serena Zhang*, **Hanchen Wang***, Yuanhao Qu*, Yingzhou Lu*, Yusuf Roohani, *et al.*, Michael Snyder, Le Cong, Aviv Regev, and Jure Leskovec — **Biomni: A General-Purpose Biomedical AI Agent**. *bioRxiv 2025; in revision at Science.*

[J12] **Hanchen Wang***#, Yichun He*, Paula P. Coelho*, Matthew Bucci*, Abbas Nazir*, Bob Chen, *et al.*, Orit Rozenblatt-Rosen, Jure Leskovec, and Aviv Regev# — **SpatialAgent: An Autonomous AI Agent for Spatial Biology**. *bioRxiv 2025; in revision at Nature.*

[J11] Tianyu Liu*, Simeng Han*, **Hanchen Wang***#, *et al.*, Arman Cohan, Hua Xu, Mark Gerstein, James Zou, and Hongyu Zhao# — **Towards AI Research Assistant for Expert-Involved Learning**. *arXiv 2025; in review at Nature Machine Intelligence.*

[J10] **Hanchen Wang**, Jure Leskovec, and Aviv Regev — **Limitations of Cell Embedding Metrics Assessed Using Drifting Islands**. *Nature Biotechnology 2025.*

[J9] Karin Hrovatin*, Lisa Sikkema*, *et al.*, Fabian Theis#, and Malte Luecken# — **Considerations for Building and Using Integrated Single-Cell Atlases**. *Nature Methods 2024.*

[J8] **Hanchen Wang***, Tianfan Fu*, Yuanqi Du*, *et al.*, Petar Veličković, Max Welling, Linfeng Zhang, Connor Coley, Yoshua Bengio, and Marinka Zitnik — **Scientific Discovery in the Age of AI**. *Nature 2023.*

[J7] Jiefeng Gan, **Hanchen Wang***, Hui Yu*, *et al.*, Guoping Wang, and Tian Xia# — **Focalizing Regions of Biomarker Relevance Facilitates Biomarker Prediction on Histopathological Images**. *iScience 2023.*

[J6] Xiang Bai*, **Hanchen Wang***, Liya Ma*, Yongchao Xu*, Jiefeng Gan*, *et al.*, Chuansheng Zheng, Jianming Wang, Zhen Li, Carola-Bibiane Schönlieb#, and Tian Xia# — **Advancing COVID-19 Diagnosis with Privacy-Preserving Collaborations in AI**. *Nature Machine Intelligence 2021.*

[J5] James Bullock, Yimao Wan, Mark Hettick, Zhaoran Xu, Sieu Pheng Phang, Di Yan, **Hanchen Wang**, Wenbo Ji, Chris Samundsett, Ziv Hameiri, Daniel Macdonald, Andres Cuevas, and Ali Javey — **Dopant-Free Partial Rear Contacts Enabling 23% Silicon Solar Cells**. *Advanced Energy Materials 2019.*

[J4] James Bullock, Yimao Wan, Zhaoran Xu, Stephanie Essig, Mark Hettick, **Hanchen Wang**, Wenbo Ji, Mathieu Boccard, Andres Cuevas, Christophe Ballif, and Ali Javey — **Stable Dopant-free Asymmetric Heterocontact Silicon Solar Cells with Efficiencies Above 20%**. *ACS Energy Letters 2018.*

[J3] James Bullock, Hiroki Ota, **Hanchen Wang**, Zhaoran Xu, Mark Hettick, Di Yan, Christian Samundsett, Yimao Wan, Stephanie Essig, Monica Morales-Masis, Andrés Cuevas, and Ali Javey — **Microchannel Contacting of Crystalline Silicon Solar Cells**. *Scientific Reports 2017.*

[J2] Weisheng Li*, Jian Zhou*, **Hanchen Wang***, Shuxian Wang, Zhihao Yu, Songlin Li, Yi Shi, and Xinran Wang — **Logical Integration Device for Two-dimensional Semiconductor Transition Metal Sulfide**. *Acta Physica Sinica 2017.*

[J1] Dongbo Zhao, Ling Yang, Yigao Yuan, **Hanchen Wang**, Hao Dong, and Shuhua Li — **Molecular Mechanism of Self-Assembly of Aromatic Oligoamides into Interlocked Double-Helix Foldamers**. *Journal of Physical Chemistry B 2017.*

- CONFERENCE PAPERS & WORKSHOPS

[C13] Shuvom Sadhuka, Drew Prinster, *et al.*, Bonnie Berger, Aviv Regev, and **Hanchen Wang#** — **E-valuator: Improving LLM Verifier with Sequential Hypothesis Testing**. *In submission.*

[C12] Namkyeong Lee, Yunhak Oh, Heewoong Noh, *et al.*, and Chanyoung Park — **3D Interaction Geometric Pre-training for Molecular Relational Learning**. *NeurIPS 2025, Spotlight.*

[C11] Minsheng Hao*, Yongju Lee*, **Hanchen Wang**, Gabriella Scalia, and Aviv Regev# — **PerTurboAgent: A Self-Planning Agent for Boosting Sequential Perturb-seq Experiment**. *MLCB 2025.*

[C10] Chenyu Wang*, Masatoshi Uehara*, *et al.*, Tommi Jaakkola#, Sergey Levine#, **Hanchen Wang#**, and Aviv Regev# — **Fine-Tuning Discrete Diffusion Models via Reward Optimization with Applications to DNA and Protein Design**. *ICLR 2025.*

[C9] Tianyu Liu*, Edward De Brouwer*, *et al.*, Aviv Regev#, and Graham Heimberg# — **Learning Multi-cellular Representations of scRNA Data Enables Characterization of Patient-level Disease States**. *RECOMB 2025, Oral.*

[C8] **Hanchen Wang***, Jean Kaddour*, Shengchao Liu, Jian Tang, Joan Lasenby, and Qi Liu — **Evaluating Self-Supervised Learning for Molecular Graph Embeddings**. *NeurIPS 2023*.

[C7] Dingmin Wang, Shengchao Liu, **Hanchen Wang**, Bernardo Cuenca Grau, Linfeng Song, Jian Tang, Song Le, and Qi Liu — **Augmenting Message Passing by Retrieving Similar Graphs**. *ECAI 2023*.

[C6] **Hanchen Wang*** and M. Noormandipour* — **Matching Point Sets with Quantum Circuits Learning**. *ICASSP 2022*.

[C5] Shengchao Liu, **Hanchen Wang**, Weiyang Liu, Joan Lasenby, Hongyu Guo, and Jian Tang — **Pre-training Molecular Graph Representation with 3D Geometry**. *ICLR 2022*.

[C4] **Hanchen Wang**, Qi Liu, Xiangyu Yue, Joan Lasenby, and Matthew J. Kusner — **Unsupervised Point Cloud Pre-training via Occlusion Completion**. *ICCV 2021*.

[C3] Weiyang Liu*, Zhen Liu*, **Hanchen Wang***, Liam Paull, Bernhard Schölkopf, and Adrian Weller — **Iterative Teaching by Label Synthesis**. *NeurIPS 2021, Spotlight*.

[C2] **Hanchen Wang**, Nina Grgić-Hlača, Preethi Lahoti, Krishna P. Gummadi, and Adrian Weller — **An Empirical Study on Learning Fairness Metrics for COMPAS Data with Human Supervision**. *NeurIPS 2019, Workshop on Human-Centered Machine Learning*.

[C1] Zhihao Yu*, **Hanchen Wang***, Weisheng Li, Sheng Xu, Xiongfei Song, Shuxian Wang, Peng Wang, Peng Zhou, Yi Shi, Yang Chai, and Xinran Wang — **Negative Capacitance 2D MoS_2 Transistors with sub-60 mV/dec Subthreshold Swing over 6 Orders, 250 μA/μm Current Density, and Nearly-hysteresis-free**. *IEDM 2017, Oral*.