

EDUCATION

Massachusetts Institute of Technology

PhD Candidate in Electrical Engineering and Computer Science

- Advisor: Dr. Caroline Uhler

Cambridge, MA

since 2022

Imperial College London

MEng in Mathematics and Computer Science, First-Class Honours

- Thesis: "Spotting the Unexpected: Self-Supervised Anomaly Detection and Localization in Images"
- Advisor: Dr. Bernhard Kainz

London, UK

2017–2021

INTERESTS

Machine learning methods for biology and health.

REFEREED PUBLICATIONS

1. **Schlüter HM**, Uhler C. Integrating representation learning, permutation, and optimization to detect lineage-related gene expression patterns. *Nature Communications*, 2025. Available: doi.org/10.1038/s41467-025-56388-7
2. **Schlüter HM**, Tan J, Hou B, Kainz B. Natural synthetic anomalies for self-supervised anomaly detection and localization. *European Conference on Computer Vision*, 2022. Available: doi.org/10.1007/978-3-031-19821-2_27
3. Faria NR, Mellan TA, Whittaker C, ..., **Schlüter HM**, ... (72 authors). Genomics and epidemiology of the P.1 SARS-CoV-2 lineage in Manaus, Brazil. *Science*, 2021. Available: doi.org/10.1126/science.abh2644
4. Ding LJ, **Schlüter HM**, Szucs MJ, Ahmad R, Wu Z, Xu W. Comparison of statistical tests and power analysis for phosphoproteomics data. *Journal of Proteome Research*, 2019. Available: doi.org/10.1021/acs.jproteome.9b00280

MANUSCRIPT IN REVISION

1. **Schlüter HM***, Sornapudi TR*, Leiser D, Koller S, Karavelioglu Z, Uhler C, Shivashankar GV. Deep learning-based analysis reveals patient-level cancer therapy trajectories using single-cell PBMC chromatin images.

AWARDS AND HONORS

- **DeepMind PhD Scholarship** – full funding for 4-year PhD program at Imperial College (declined) 2021
- **Governors' Prize** for best overall performance in degree program, Imperial College London 2021
- **Splunk Prize** for an excellent thesis in the area of data science and machine learning, Imperial College London 2021
- **Joint Mathematics and Computer Science Departmental Prize**, Imperial College London 2018, 2019, 2020

RESEARCH EXPERIENCE	MIT LIDS Graduate Research Assistant	since 2022
	• Creating new computational methods at the intersection of AI and biology. • Advisor: Dr. Caroline Uhler	
	Imperial College London MEng Student	Nov 2020–Jun 2021
	• Developed and evaluated a new method for self-supervised anomaly localization in natural and medical images. • Advisor: Dr. Bernhard Kainz	
	Imperial College London Undergraduate Research Assistant	Oct 2020–Mar 2021
TEACHING	• Analyzed fine-scale mobility data for several geographical regions including the UK and Brazil for COVID-19 research. • Advisor: Dr. Seth Flaxman	
	MIT BCS Visiting Student	Aug–Sep 2018
	• Extended a simulation framework for mass spectrometry proteomics data and evaluated the performance of different statistical methods using simulated data. • Advisor: Dr. Weifeng Xu	
	MIT IDS.012 / 6.419 / IDS.131 / 6.439 Statistics, Computation, and Applications	
	Graduate Teaching Assistant	Spring 2024
MENTORSHIP	Imperial College London, First Year Mathematics Tutorials	
	Undergraduate Teaching Assistant	Fall 2019, Spring 2020, Fall 2020, Spring 2021
	• Claire Wu (Undergraduate), MIT	since Summer 2025
	• Vanessa Xiao (Undergraduate/MEng), MIT	since Spring 2025
	• Kyra Henriques (Undergraduate), MIT	Fall 2025–Spring 2026
TALKS	• Carol Chen (Undergraduate), MIT	Fall 2025
	• Victory Yinka-Banjo (Undergraduate), MIT	Summer 2025
	• <i>Schmidt Center Scientific Advisory Board Meeting</i> , Broad Institute	2026
	• <i>Cell Circuits & Epigenomics Seminar</i> , Broad Institute	2025
	• <i>LIDS Student Conference</i> , MIT	2024
POSTERS	• <i>Single Cell Analyses Meeting</i> , Cold Spring Harbor Laboratory	2023
	• <i>AACR Annual Meeting</i>	2026
	• <i>Pixels to Patients workshop at WACV</i>	2026
	• <i>Broad Institute Retreat</i> (Poster prize, top 10/307 posters), Broad Institute	2025
	• <i>Data-Driven Discovery: AI and Modeling in Biology Workshop</i> , Allen Institute	2024
	• <i>EMBO Workshop on Nuclear Mechano-Genomics</i>	2024
	• <i>Broad Institute Retreat</i> , Broad Institute	2023

INDUSTRY EXPERIENCE	Google Software Engineer	Oct 2021–Aug 2022
	Contributed to development and design of a new Android video editing library, open-sourced as part of github.com/androidx/media.	
	Google Software Engineering Intern	Jun–Sep 2020
	Google STEP (Student Training in Engineering Program) Intern	Jul–Sep 2019
SERVICE	MIT EECS Graduate Application Assistance Program Organizer & Mentor	since 2022
	MIT Outing Club Trip Leader, Treasurer, President	since 2024
	Imperial College Union Departmental Wellbeing Representative	2018–2020