

Xiang Ge (Xiangge) Luo

☎ +41 77 985 76 18 | ✉ luox@ethz.ch | 🌐 xgluo.github.io

Education

ETH Zurich

PHD CANDIDATE IN COMPUTATIONAL BIOLOGY

- Thesis: Modelling tumor mutation trees for evolution-guided precision oncology
- Advisor: Prof. Dr. Niko Beerenwinkel | Second advisor: Dr. Jack Kuipers
- Doctoral committee: Prof. Dr. Jasmine Foo, Prof. Dr. Benjamin Raphael

Basel, Switzerland
2020.11 - expected 2025.12

ETH Zurich

MASTER OF SCIENCE IN STATISTICS

- GPA: 5.88/6 – Graduated with distinction
- Thesis: Learning Bayesian networks from ordinal data
- Advisor: Dr. Jack Kuipers

Zurich, Switzerland
2018.09 - 2020.09

University of Waterloo

BACHELOR OF MATHEMATICS

- GPA: 92% – Graduated with distinction, Dean's Honours List

Waterloo, Canada
2013.09 - 2018.04

Research Experience

Computational Biology Group, ETH Zurich

SCIENTIFIC ASSISTANT

- Advisor: Prof. Dr. Niko Beerenwinkel
- Developed mathematical and statistical models to infer cancer evolution from cross-sectional single-cell phylogenies, aiming to predict drug resistance and facilitate evolution-guided precision oncology.

Basel, Switzerland
2020.11 - present

Institute of Molecular Systems Biology, ETH Zurich

SEMESTER STUDENT

- Advisor: Prof. Dr. Mattia Zampieri
- Analyzed E. coli drug response metabolomics data to investigate regulatory and functional relationships between metabolites.

Zurich, Switzerland
2019.03 - 2019.07

Seminar for Statistics, ETH Zurich

STATISTICS LAB STUDENT

- Advisor: Dr. Markus Kalisch
- Analyzed mouse experimental data using mixed models to assess bone loss and identify early osteoporosis markers.

Zurich, Switzerland
2019.03 - 2019.06

Department of Statistics and Actuarial Science, University of Waterloo

UNDERGRADUATE RESEARCHER

- Advisor: Prof. Dr. Alexander Schied
- Derived the Nash equilibrium for risk-averse investors in a market impact game with transient price impact and quadratic transaction costs over finite and infinite horizons.

Waterloo, Canada
2017.09 - 2017.12

Awards & Scholarships

2025	ISMB/ECCB 2025 Conference Fellowship, ISCB (USD 500)	United Kingdom
2025	Robert Gnehm Grant, ETH Zurich (CHF 750)	Canada
2024	SIB Remarkable Outputs 2023 Award, Swiss Institute of Bioinformatics	Switzerland
2018	Undergraduate Student Research Award, NSERC (CAD 4,500)	Canada
2018	President's Research Award, University of Waterloo (CAD 1,500)	Canada
2016	President's International Experience Award, University of Waterloo (CAD 1,500)	Canada
2014	Isabel Farrar Undergraduate Entrance Scholarship, University of Waterloo (CAD 4,000)	Canada
2014	President's Scholarship of Distinction, University of Waterloo (CAD 2,000)	Canada

Publications

Xiang Ge Luo, Jack Kuipers, Kevin Rupp, Koichi Takahashi and Niko Beerenwinkel. Bayesian inference of fitness landscapes via tree-structured branching processes. *Bioinformatics*, 41:i160-i169, 2025. (ISMB/ECCB 2025, acceptance rate 17%)

Xiang Ge Luo, Jack Kuipers and Niko Beerenwinkel. Joint inference of exclusivity patterns and recurrent trajectories from tumor mutation trees. *Nature Communications*, 14:3676, 2023. (**RECOMB 2022**, acceptance rate 21.3%)

Xiang Ge Luo, Giusi Moffa and Jack Kuipers. Learning Bayesian networks from ordinal data. *Journal of Machine Learning Research*, 22:1-44, 2021.

Xiangge Luo and Alexander Schied. Nash equilibrium for risk-averse investors in a market impact game with transient price impact. *Market Microstructure and Liquidity*, 5:2050001, 2020.

Conferences, Seminars & Workshops

2025.07	Contributed talk , ISMB/ECCB 2025 Conference	Liverpool, UK
	• Bayesian inference of fitness landscapes via tree-structured branching processes	
2025.04	Poster , 6th Zurich Precision Oncology Symposium	Zurich, Switzerland
	• FiTree: fitness inference from single-cell phylogenies applied to acute myeloid leukemia data	
2025.03	Invited talk , D-BSSE Departmental Seminar Series, ETH Zurich	Basel, Switzerland
	• Fitness inference from single-cell phylogenies using tree-structured branching processes	
2025.02	Contributed talk , PhyloBasel Seminar Series, ETH Zurich	Basel, Switzerland
	• Bayesian inference of fitness landscapes via tree-structured branching processes	
2024.06	Award talk , SIB Days – The Swiss Bioinformatics Summit	Virtual
	• Mining tumor mutation trees with TreeMHN for evolution-guided precision oncology	
2023.06	Contributed talk , SKINTEGRITY.CH Annual Retreat	Spiez, Switzerland
	• Joint inference of exclusivity patterns and recurrent trajectories from tumor mutation trees	
2022.06	Contributed talk , Mutual Hazard Networks Workshop	Virtual
	• Joint inference of exclusivity patterns and recurrent trajectories from tumor mutation trees	
2022.05	Contributed talk , RECOMB 2022 Conference	San Diego, USA
	• Joint inference of exclusivity patterns and recurrent trajectories from tumor mutation trees	
2022.04	Contributed talk , OLISSIPO Exchange Week	Lisbon, Portugal
	• Joint inference of exclusivity patterns and recurrent trajectories from tumor mutation trees	
2022.03	Poster , Ascona Workshop 2022	Ascona, Switzerland
	• Joint inference of exclusivity patterns and recurrent trajectories from tumor mutation trees	
2021.06	Invited talk , Royal Bank of Canada Machine Learning Seminar	Virtual
	• Nash Equilibrium for Risk-Averse Investors in a Market Impact Game with Transient Price Impact	

Teaching

Spring 2023	Teaching Assistant , Statistical Models in Computational Biology	ETH Zurich
Spring 2022	Head Teaching Assistant , Statistical Models in Computational Biology	ETH Zurich
Spring 2022	Teaching Assistant , LSZGS Advanced Block Course Computational Biology	ETH Zurich
Spring 2021	Teaching Assistant , Statistical Models in Computational Biology	ETH Zurich

Supervision

2023	Laura Quintas , Master Student, INESC-ID (Co-supervised with Monica Baciu-Dragan)
2023	Laurenz Keller , Master Student, ETH Zurich (Co-supervised with Pawel Piotr Czyz)
2022	Jiayi Wang , Master Student, ETH Zurich (Co-supervised with Pawel Piotr Czyz)

Academic Services

Journal Reviewer for Genome Research, Bioinformatics **Conference Reviewer** for RECOMB, ISMB

Languages and Skills

Coding	Python, R, C++, MATLAB, Git, Snakemake, bash, \LaTeX
Languages	English (working proficiency), Mandarin (native), Cantonese (native)