

Xinrui JIA

(shin-ray)

✉ xinrui.321@gmail.com 🌐 xinruij.github.io

📞 +41 78 334 23 63 📍 Avenue du Temple 6, 1020 Renens VD, CH

EDUCATION

École Polytechnique Fédérale de Lausanne (EPFL)

PhD in Computer Science

Theory of Computation Lab, thesis topic: clustering

09.2018 - Present

Lausanne, Switzerland

University of Waterloo

Bachelor's in Math *with Distinction - Dean's Honours List, Highest Honours*

Majors: Combinatorics and Optimization, Pure Mathematics

09.2014 - 06.2018

Waterloo, Canada

SKILLS

Optimization: Discrete optimization, algorithm design, modelling and problem solving.

Programming: Experience with Python, SQL, C/C++, Java, Matlab, Gurobi.

PROFESSIONAL EXPERIENCE

AI/ML Intern, Apple Inc.

Conducted applied research in Machine Learning Platform and Technologies team. Designed and implemented method in python for system-wide optimization. *Details proprietary.*

06.2021 - 12.2021

Zurich, Switzerland

Private Tutor, Self-employed

Tutored University of Waterloo classes over video conferences: Analysis, Intro to Optimization, Intro to Combinatorics, Graph Theory.

06.2020 - 05.2021

Remote

Backend Application Developer, HAA Analytics

Used Python, NumPy, Pandas, SQL to build reinsurance analytics web app at start-up.

Collaborated with team of 6 programmers in every part of software development cycle. Product successfully demoed 3 months into internship.

05.2015 - 08.2015

Toronto, Canada

ACADEMIC EXPERIENCE

Visiting Student Researcher, Simons Institute at UC Berkeley

Participated in program Data-Driven Decision Processes.

08.2022 - 09.2022

Berkeley, USA

Research Intern, EPFL Discrete Optimization Lab

Proved guarantees for two algorithms for max dispersion problem and explored applications to image recognition. Presented results with visualizations in PyGame.

01.2017 - 04.2017

Lausanne, Switzerland

Research Intern, University of Waterloo

Implemented key-exchange protocol using C++ and SageMath. Developed cryptanalysis attack for proposed post-quantum Diffie-Hellman key-exchange protocol.

05.2016 - 08.2016

Waterloo, Canada

LANGUAGES

English: Native

French: B1 level

German: Classes ongoing

COMPETITIONS AND AWARDS

University of Waterloo Mathematics Scholarships (>30 000 CAD)

2014 - 2018

Ontario Music Festivals (provincial competition, grade 10 violin)

2013

Windsor Symphony Youth Orchestra (concertmaster)

2012-2013

Canada National Math Camp (invitation only top 21 students nationally)

2012

Western University High School Debate Competition (quarter finalist)

2012

ACTIVITIES AND HOBBIES

Rock climbing, hiking, violin, chamber music, choir.

PUBLICATIONS

1. Xinrui Jia, Ola Svensson, and Weiqiang Yuan. The Exact Bipartite Matching Polytope Has Exponential Extension Complexity. In *Symposium on Discrete Algorithms* (SODA 2023).

2. Xinrui Jia, Lars Rohwedder, Kshiteej Sheth, and Ola Svensson. Towards Non-Uniform k-Center with Constant Types of Radii. In *Symposium on Simplicity in Algorithms* (SOSA 2022).
3. Buddhima Gamlath, Xinrui Jia, Adam Polak, and Ola Svensson. Nearly-tight and Oblivious Algorithms for Explainable Clustering. In *Conference on Neural Information Processing Systems* (NeurIPS 2021).
4. Xinrui Jia, Kshiteej Sheth, and Ola Svensson. Fair Colorful k-Center Clustering. In *Proceedings of the 21st International Conference on Integer Programming and Combinatorial Optimization* (IPCO 2020).