

# Xinrui JIA

(shin-ray)

✉ xinrui.321@gmail.com 🌐 xinruij.github.io  
📞 +41 78 334 23 63 📍 Grand-Rue 95, 1110 Morges, CH



## OBJECTIVE

*Learn new skills and be challenged in a technical role.*

## EDUCATION

### École Polytechnique Fédérale de Lausanne (EPFL)

PhD in Computer Science  
Theory of Computation Lab, research area: algorithms

09.2018 - 08.2023  
Lausanne, Switzerland

### University of Waterloo

Bachelor's in Mathematics *with Distinction - Dean's Honours List*  
Majors: Combinatorics and Optimization, Pure Mathematics

09.2014 - 06.2018  
Waterloo, Canada

## SKILLS

Mathematics, coding, algorithm design, modelling, and problem solving.  
Programming languages: Experience with Python, Gurobi, SQL, C/C++, Scheme, Java, Matlab.

## PROFESSIONAL EXPERIENCE

### Planny SA, Data Scientist - Optimization Specialist

Building engine in Python to compute schedules for healthcare workers. Using Gurobi and optimization to model complex constraints and balance opposing objectives.

08.2023 - current  
Geneva, Switzerland

### Apple Inc., Optimization Intern

Conducted applied research in AI/ML team. Designed techniques for optimization of system-wide operations and implemented methods in Python and Gurobi. *Details proprietary.*

06.2021 - 12.2021  
Heidelberg, Germany

### Private Tutor, Self-employed

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

06.2020 - 05.2021  
Remote

### HAA Analytics, Backend Application Developer

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

### Simons Institute at UC Berkeley, Visiting Student Researcher

Participated in program Data-Driven Decision Processes.

08.2022 - 09.2022  
Berkeley, USA

### EPFL Discrete Optimization Lab, Research Intern

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

### University of Waterloo, Research Intern

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: Intermediate

German: Beginner

## PERSONAL DETAILS

Residence: Switzerland (B permit)

Nationality: Canadian

Date of birth: 13.11.1996

## COMPETITIONS AND AWARDS

---

University of Waterloo Mathematics Scholarships (\$31 000 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 Ontario 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)*.