

# Ernest van Wijland

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Born March 25<sup>th</sup>, 2001 • French & Dutch citizenships

## Education

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- **MSc Computer Science, BSc Mathematics** **École Normale Supérieure**  
2020 – 2024  
*Paris, France*
  - Entry after a competitive nationwide exam, with 13 spots each year in Computer Science and Mathematics (funding for a four year fellowship).
  - Leading french research program in computer science and mathematics.
  - Graduated both the MSc (MPRI) and the BSc (double major in Mathematics and Computed Science) with highest honors.
- **Preparatory Class** **Lycée Louis-le-Grand**  
2018 – 2020  
*Paris, France*
  - Leading french intensive university-level program in mathematics, physics and computer science to prepare for highly competitive nationwide contests.
  - Delivers first two years of BSc in mathematics, physics and computer science.

## Academic achievements

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- **MasterDev Best French Developer Contest 5th place finisher** 2023  
*Paris, France*
  - French national contest in Computer Science, with thousands of participants from every major IT company
  - awarded the 5000€ Genius prize as a high scoring student
- **Flat Network Society member** 2023  
*Online*
  - top Capture The Flag (competitive hacking) team in France, 15th worldwide
- **Prologin 5th place finisher** 2019  
*Paris, France*
  - French national contest in Computer Science for students under 21
  - perfect score in the semi-final round (competitive programming and algorithms) in 2019 and 2020
  - placed 5th in the final round (AI design) in 2019, and 12th in 2018 (final round didn't take place in 2020 due to COVID restrictions)
- **Master on Codeforces** 2019 – Present  
*Online*

Achieved a rating of 2183 on Codeforces, the biggest competitive programming website.
- **International Olympiad in Informatics Bronze medalist** 2018  
*Tsukuba, Japan*
- **Dutch National Olympiad in Informatics winner** 2018  
*Utrecht, Netherlands*

- **Innopolis University Olympiad in Informatics finalist**  
*Innopolis, Russia* 2018
  - **International Olympiad in Informatics participant**  
*Tehran, Iran* 2017
- As part of the top 4 High-School students in the Dutch National Olympiad in Informatics.

## Programming skills

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- **Advanced**  
C, C++, Python, OCaml
- **Can use**  
Java, Javascript, MySQL, PHP

## Research experience

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- **Internship: Euclidean CVRP** **IRIF**  
*Paris, France* 2023 – 2024  
Currently working for a year under Claire Mathieu's supervision at IRIF on finding a faster approximation scheme for the Euclidean CVRP.  
**Publication: Faster Approximation Schemes for k-TSP and k-MST in the Euclidean Space**
- *Palaiseau, France* 2023  
My internship in Polytechnique resulted in a publication which is currently under review at SODA.  
**Internship: Euclidean CVRP, k-TSP, k-MST** **LIX (Polytechnique)**
- *Palaiseau, France* 2023  
Worked for a semester under Hang Zhou's supervision in Polytechnique on finding faster approximation schemes for the Euclidean CVRP, k-TSP and k-MST.  
**Publication: Maximizing Nash Social Welfare in 2-Value Instances: Delineating Tractability**
- *Sarrebruck, Germany* 2023  
My internship in the MPII resulted in a second publication which is currently under review by the MOR journal.  
**Internship: Approximating 2-WECS** **THL (EPFL)**
- *Lausanne, Switzerland* 2022  
Worked for a semester under Ola Svensson's supervision in the Combinatorial Optimization team at EPFL on finding a better than 2 approximation for 2-WECS.  
**TSP approximation for cubic graphs** **TALGO-DI (École Normale Supérieure)**
- *Paris, France* 2021 – 2022  
Worked for a semester under Chien-Chung Huang's supervision in the TALGO team on lowering the polynomial approximation bound for the TSP in the case of cubic graphs.  
**Publication: Maximizing Nash Social Welfare in 2-Value Instances** **AGT (Max Planck Institut)**
- *Sarrebruck, Germany* 2021  
My internship in the MPII resulted in a publication which has been accepted by the AAAI conference. I specifically worked on showing the problem was NP-Hard for almost all rationals.  
**Internship: Fair Division for additive instances** **AGT (Max Planck Institut)**
- *Sarrebruck, Germany* 2021  
Worked for two months in the Algorithmic Game Theory team of the MPII under Kurt Mehlhorn's supervision of the Fair Division problem for additive instances.  
**Kahn Network** **DI (École Normale Supérieure)**
- *Paris, France* 2021

Implemented a Kahn Network from scratch in OCaml as a project for my OS course.

◦ **Spectrum of heavy-tailed random matrices**

**DMA (École Normale Supérieure)**

◦ *Paris, France*

*2021*

Worked under Laure Dumaz's supervision on understanding and presenting a paper by Ben Arous and Guionnet.stuff

◦ **Julia compiler**

**DI (École Normale Supérieure)**

◦ *Paris, France*

*2020 – 2021*

Implemented a Julia compiler from scratch in OCaml, OCamllex, Assembler and Bash.

◦ **Minijazz processor**

**DI (École Normale Supérieure)**

◦ *Paris, France*

*2020 – 2021*

Implemented a processor in OCaml for Minijazz.

◦ **Planted cliques in random graphs**

**Lycée Louis-le-Grand**

◦ *Paris, France*

*2018 – 2020*

A research project on algorithms to find planted cliques in Erdős-Renyi random graphs.

◦ **Distance from an evolving set of nodes in a graph**

**Lycée Louis-le-Grand**

◦ *Paris, France*

*2018 – 2020*

A research project on a generalization to graphs of a well-known problem on trees, finding heuristics and exact algorithms to solve it for certain families of graphs.

## Languages

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- **English:** Fluent (107 TOEFL score in 10th grade, spent a year in the US in High-School)
- **French:** Native
- **German:** B1 level
- **Dutch, Japanese, Russian:** Learning

## Extra-Curricular

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- Spent a year in Berkeley, CA and went to Berkeley High-School in 9th grade, where I took part in math competitions as part of the school's team.
- Spent three months in Kyoto, Japan and went to the Kyoto International University Academy in 10th grade for a trimester.
- Active member of France-IOI and Nederlandse Informatica Olympiade associations (preparing young French and Dutch students to participate in the international informatics olympiad, and writing the national olympiad problems).
- Gave Algorithms lectures at an IOI-Morocco training camp (2019).
- President of the Algorithms Club at Louis-le-Grand : 2018-2019
- Gave college level private courses at Edukaty in mathematics and computer science.
- Active Judo black belt and Tennis player.
- Practicing piano for the past 15 years, part of the chamber music club in the ENS. Founder of the Early Music section.
- Graduated from the Juvisy Music Conservatory in Music Theory, Piano and Ensemble Playing (2018).
- Minor in Musicology at ENS.