

# Joaquim Cera Da Conceição

Université de Caen Normandie  
UFR des Sciences - Campus 2  
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Born on 06/06/1998

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## Education

- 2022 – ongoing **PhD in Mathematics**, Université de Caen Normandie (LMNO),  
Advisor: Christian Ballot  
Title: Diverse density questions in the theory of Lucas sequences
- 2021–2022 **Master's Degree in Pure Mathematics**, *Number theory and functional analysis*,  
Université de Bourgogne Franche-Comté
- 2019–2021 **Master's Degree in General Mathematics**, Université de Caen Normandie
- 2016–2019 **Licence de Mathématiques**, Université de Caen Normandie, 3-year university  
degree in mathematics
- 2015–2016 **Baccalauréat Scientifique**, Lycée Jean Rostand, Caen

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## Experiences

- 2022 **Research Internship**, *Master's thesis*, Université de Caen Normandie,  
Advisor: Christian Ballot  
Title: Two density studies
- 2021 **Research Project**, Université de Franche-Comté,  
Advisor: Christophe Delaunay  
Title: Prime number theorem
- 2020 **Research Project**, Université de Caen Normandie,  
Advisor: Christian Ballot  
Title: Euler's totient function for Gaussian and Eisenstein integers
- 2019 **Laboratory Internship**, Université de Caen Normandie,  
Advisor: Christian Ballot  
Title: Solvable, nilpotent, abelian and cyclic numbers

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## Publications

- 2023 **Multinomial Catalan Numbers and Lucas Analogues**, *Journal of integer sequences*, 26, Article 23.9.7

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## Preprints

- 2024 **Divisibility of the Multiplicative Order Modulo Monic Irreducible Polynomials Over Finite Fields**
- 2024 **Primitive Divisors of Lucas Sequences in Polynomial Rings**

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## Teaching

- 2024 – 2025 **Calculus**, *first year computer science students*, real numbers, functions, sequences, limits, trigonometry, asymptotic analysis  
50h of mixed courses and exercise sessions

- 2023 – 2024 **Approfondissement en Mathématiques**, *first year mathematics students*, induction, logic, sets, complex numbers, differential equations  
30h of exercise sessions
- Mock Oral Exams (“Colles”) in Approfondissement en Mathématiques**, *first year mathematics CUPGE students*  
10h
- Linear Algebra**, *second year mathematics students*, geometry, endomorphisms, euclidean spaces, symmetry, projection  
15h of exercise sessions

## Talks

- 07/10/2024 **Nombres de Catalan multinomiaux et suites de Lucas**, Young Researchers, LMNO (Caen, France)
- 07/11/2024 **Divisibility of the rank of appearance of primes in Fibonacci polynomials in  $\mathbb{F}_q[T]$** , 21st International Fibonacci Conference (Claremont, CA, USA)
- 11/23/2023 **Prime divisors of companion Lucas sequences in  $\mathbb{F}_q[\theta]$** , Number Theory team retreat, LMNO (Bayeux, France)
- 05/17/2023 **Quid of primes for which the multiplicative order of rationals is divisible by a fixed integer**, QUID seminar, IMT (Toulouse, France)
- 12/08/2022 **Premiers pour lesquels le ppcm des ordres de nombres rationnels est multiple d’un entier fixé**, Young Researchers seminar, LMNO (Caen, France)

## Formation

- 2024 **Scientific Integrity Formation**, ED MIIS (Caen, France)
- 2023 – 2024 **Working Group on Elliptic Curves**, *Young Researchers Working Group (Caen, France)*
- 2023 **Summer School**, *local Langlands correspondences, p-adic group representations, local class field theory, Bruhat–Tits buildings (Amiens, France)*
- 2023 **Teaching Formation**, ED MIIS (Caen, France)

## Skill

- Languages **French** (native), **English** (proficient user), **Brazilian Portuguese** (independent user)
- Programming **LaTeX**, **PARI/GP**, **Python**, **SageMath**, **Maxima**