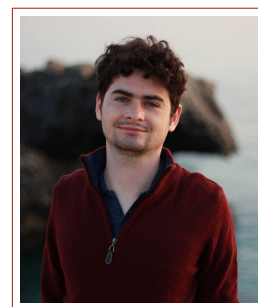


# Sergey Yurkevich

## Curriculum Vitae

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🌐 [www.yurkevi.ch](http://www.yurkevi.ch)



### Personal Information

Date of Birth July 10, 1996  
Place of Birth Moscow, Russian Federation  
Nationality Austrian

### Education

- 2020–2023 **PhD in Mathematics**,  
*Advisors:* Alin Bostan and Herwig Hauser,  
*Thesis:* Integer sequences, algebraic series and differential operators.  
UNIVERSITY OF VIENNA, Faculty of Mathematics, Austria  
UNIVERSITÉ PARIS-SACLAY and INRIA SACLAY, France
- 2018–2020 **Master of Science in Quantitative Finance**,  
*Advisor:* Kurt Hornik.  
VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS (WU VIENNA),  
Faculty of Quantitative Finance, Austria
- 2017–2020 **Master of Science in Mathematics**,  
*Advisor:* Herwig Hauser.  
UNIVERSITY OF VIENNA, Faculty of Mathematics, Austria
- 2015–2018 **Bachelor of Science in Business Administration**.  
VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS (WU VIENNA),  
Faculty of Economics and Social Sciences, Austria
- 2014–2017 **Bachelor of Science in Mathematics**.  
UNIVERSITY OF VIENNA, Faculty of Mathematics, Austria
- 2006–2014 **High School**.  
Bundesrealgymnasium GRG3 Radetzkystraße, Vienna, Austria
- 2006–2014 **High School**.  
Russian Embassy School, Vienna, Austria

### Scholarships

- 2021–2023 ÖAW DOC Fellowship, P-26101, *Austrian Academy of Sciences*, Austria.
- 2023 Bourse d'Excellence (Excellence scholarship), *Institut français d'Autriche*,  
Mobility scholarship: Austria/France.
- 2021–2023 WTZ Austria-France Collaboration Project Funding FR09/2021,  
*Agency for Education and Internationalisation*, Austria.

- 2018–2020 Research Scholarship for Master Students, *University of Vienna & FWF*, FWF Project 31338, Austria.
- 2018–2022 Scholarship for young talented researchers, *Pro Scientia*, Austria.
- 2014–2020 Scholarship of excellence (Leistungsstipendium), *University of Vienna*, Austria.
- 2016–2020 Scholarship of excellence *Vienna University of Economics and Business*, Austria.

## Competitions and Honors

- MEMO **Middle European Mathematical Olympiad.**  
“Honourable Mention” — Hungary, 2013.
- IMO **International Mathematical Olympiad.**  
“Third Prize” (Bronze medal) — South Africa, 2014.
- VJIMC **Vojtěch Jarník International Mathematical Competition.**  
“Honourable Mention” — Czech Republic, 2015, 2016 & 2019,  
“Third Prize” — Czech Republic, 2017 & 2018.
- IMC **International Mathematical Competition.**  
“Honourable Mention” — Bulgaria, 2017,  
“Third Prize” — Bulgaria, 2015, 2016 & 2018.
- NCUMC **North Countries Universities Mathematical Competition.**  
“First Prize” — St. Petersburg, 2018.
- 4WARD **Third Uniq 4WARD Math Challenge.**  
“Third Place” — Vienna, 2020.

## Research experience

- 2021–present Doctoral research project *Integer sequences, algebraic series and differential equations*, University of Vienna, ÖAW 26101 (DOC Fellowship), Austria
- 2021–present Employment in the research project *Algebraic Solutions of Fuchsian Differential Equations*, University of Vienna, FWF Project 31338, Austria
- 2020–present Part of the research team *SpecFun/MathExp*, Inria Saclay, France
- 2021–2022 WTZ/CampusFrance collaboration project between Austria and France, *46411Y and FR09/2021*, Vienna, Austria and Paris, France
- 2018–2021 Employment in the research project *Artin Approximation, Arc Spaces and Resolution of Singularities*, University of Vienna, FWF Project 31338, Austria

## Publications

### Published and accepted articles

- May 2023 “On the representability of sequences as constant terms”, with A. Bostan and A. Straub. To appear in *Journal of Number Theory*.
- March 2023 “Beating binary powering for polynomial matrices”, with A. Bostan and V. Neiger. Accepted as a talk at *ISSAC23* – 10 pages.
- March 2023 “On the  $q$ -analogue of Pólya’s Theorem”, with A. Bostan. In: *Electronic Journal of Combinatorics*, vol 30, pp. 2.9:1-9. DOI: doi.org/10.37236/11269

- March 2023 “Fast Computation of the  $N$ -th Term of a  $q$ -Holonomic Sequence and Applications”, with A. Bostan. In *Journal of Symbolic Computation*, vol 115, pp. 96–123.  
DOI: doi.org/10.1016/j.jsc.2022.07.008
- January 2023 “An algorithmic approach to Rupert’s problem”, with J. Steininger,  
In: *Mathematics of Computation*, vol 92, pp. 1905–1929.  
DOI: doi.org/10.1090/mcom/3831
- November 2022 “Algebraicity for solutions of systems of functional equations”, with H. Notarantonio.  
Accepted as a talk at *FPSAC23* – 12 pages.
- November 2022 “Extended abstract for: solving Rupert’s problem algorithmically”, with J. Steininger.  
In: *ACM Communications in Computer Algebra*, vol 56, issue 2, pp. 32–35.  
DOI: doi.org/10.1145/3572867.3572870
- August 2022 “The art of algorithmic guessing in gfun”.  
In: *Maple Proceedings*, vol 2, No. 1, pp. 14421:1–14421:19.  
DOI: doi.org/10.5206/mt.v2i1.14421
- February 2022 “On a Class of Hypergeometric Diagonals”, with A. Bostan.  
In: *Proceedings of the American Mathematical Society*, vol 150, pp. 1071–1897.  
DOI: doi.org/10.1090/proc/15693
- February 2022 “A hypergeometric proof that Iso is bijective”, with A. Bostan.  
In: *Proceedings of the American Mathematical Society*, vol 150, pp. 2131–2136.  
DOI: doi.org/10.1090/proc/15836
- May 2021 “Diagonal Representation of Algebraic Power Series: A Glimpse Behind the Scenes”.  
In: Transcendence in Algebra, Combinatorics, Geometry and Number Theory (TRANS 2019). *Springer Proceedings in Mathematics and Statistics*, vol 373, pp. 309–339.  
DOI: doi.org/10.1007/978-3-030-84304-5\_13

### Preprints

- September 2022 “On the First Fundamental Theorem for  $GL_2(K)$  and  $SL_2(K)$ ”, with H. Melánová.

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### Research talks and participation at conferences

- June 2023 Invited speaker at *FoCM 2023*, Paris, France.
- March 2023 Speaker at *AG Diskrete Mathematik*, Vienna, Austria.
- March 2023 Participant and speaker at *JNCF*, Luminy, France.
- February 2023 Participant and speaker at *Periods Workshop*, Lisbon, Portugal.
- January 2023 Participant at *Atelier E-fonctions, G-fonctions et Périodes*, Paris, France.
- December 2022 Participant and speaker at *Enumerative Combinatorics*, Oberwolfach, Germany.
- November 2022 Participant and speaker at *CAP22*, Bures-sur-Yvette, France.
- September 2022 Participant and speaker at *Journées du GDR EFI 2022*, Toulouse, France.
- June 2022 Participant and presenter at *ISSAC 2022*, Lille, France.
- May 2022 Participant and speaker at the *Workshop on Fuchsian ODEs*, Lisbon, Portugal.
- May 2022 Speaker at the *LFANT Seminar*, Bordeaux, France.
- April 2022 Participant and speaker at the *VSM Retreat*, Yspertal, Austria.
- April 2022 Participant at *SLC (87)*, Saint-Paul-en-Jarez, France.
- March 2022 Participant and speaker at *Functional Equations in LIMoges*, Limoges, France.
- March 2022 Participant at *Journées ALEA*, Luminy, France.
- February 2022 Participant and speaker at *JNCF*, Luminy, France.

December 2021 Participant and speaker at *CAP21*, Bures-sur-Yvette, France.

November 2021 Participant and speaker at *Maple Conference*, Virtual, Online.

August 2021 Participant and speaker at *SIAM AG21*, Virtual, Online.

July 2021 Participant and speaker at *ACA 2021*, Virtual, Online.

July 2021 Participant at *ISSAC 2021*, Saint Petersburg, Russia.

June 2021 Participant at *Lattice Paths, Combinatorics and Interactions*, Marseille, France.

June 2021 Participant at *EJCIM 2021*, Virtual, Online.

March 2021 Participant at the *Journées ALEA*, Luminy, France.

March 2021 Participant and speaker at the *JNCF*, Luminy, France.

September 2020 Speaker at the seminar *Transcendance et combinatoire*.

July 2020 Participant at the *ISSAC 2020*, Kalamata, Greece.

March 2020 Participant and speaker at the *VSM Retreat*, Yspertal, Austria.

February 2020 Participant and speaker in the *Workshop on "The Arithmetic of Differential Equations"*, Lisbon, Portugal.

January 2020 Participant and speaker at the *Workshop "Algebraic Geometry in Austria"*, Seewalchen am Attersee, Austria.

September 2019 Participant at the *"Pro Scientia Sommerakademie"*, Bozen, Italy.

July 2019 Participant at the *"Lüsens Workshop"*, Lüsens, Austria.

May 2019 Participant at *"Transient Transcendence in Transylvania"*, Braşov, Romania.

February 2019 Participant and speaker at the *Workshop on "Algebraic Marvels in Differential Equations"*, Lisbon, Portugal.

January 2019 Participant and speaker at the *"Wesenufer Workshop"*, Wesenufer, Austria.

September 2018 Participant in the *VDS Summer School*, Techendorf am Weißensee, Austria.

September 2018 Participant at the conference *"Data Science in Finance with R"*, Vienna, Austria.

September 2018 Participant at the *"Pro Scientia Sommerakademie"*, Bad Aussee, Austria.

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## Peer Review Activities and other scientific activities

2022 – 2023 Reporter for the Oberwolfach Report 2250 on *Enumerative Combinatorics*

2022 Referee for *Research in Number Theory*

2021 – 2022 Referee for *ISSAC*

2021 – 2022 Referee for *European Journal of Combinatorics*

2021 Referee for *The American Mathematical Monthly*

2021 Referee for *Experimental Mathematics*

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## Languages

Russian (native), German (native), English (fluent), French (elementary)