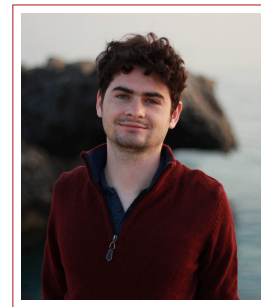


Dr. Sergey Yurkevich, MSc



Oskar-Morgenstern-Platz 1
1090 Vienna, Austria

✉ sergey.yurkevich@univie.ac.at
🌐 www.yurkevi.ch

Curriculum Vitae

Personal Information

Date of Birth July 10, 1996 (27 years old)
Place of Birth Moscow, Russian Federation
Nationality Austrian

Research experience

- 01/08/2023– present **Postdoctoral researcher in mathematics,**
In: Research project *Algebraic Solutions of Fuchsian Differential Equations*, FWF P-34765,
At: University of Vienna, Austria
- 01/09/2021– 31/07/2023 **Predocctoral researcher and PhD student,**
In: Doctoral research project *Integer sequences, algebraic series and differential equations*,
At: University of Vienna, Austria
- 01/02/2020– 31/08/2021 **Predocctoral researcher and PhD student,**
In: Research project *Algebraic Solutions of Fuchsian Differential Equations*, FWF P-34765,
At: University of Vienna, Austria
- 01/09/2020– 06/07/2023 **Predocctoral researcher and PhD student,**
At: *SpecFun/MathExp*, Inria Saclay, France
- 01/09/2020– 06/07/2023 **Predocctoral researcher,**
At: *De rerum natura*, ANR reserach project ANR-19-CE40-0018, France
- 01/09/2018– 31/01/2020 **Student employee,**
In: research project *Artin Approx., Arc Spaces & Resolution of Singularities*, FWF P-31338,
At: University of Vienna, Austria

Education

- 01/02/2020– 06/07/2023 **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
- 01/10/2018– 15/09/2020 **Master of Science in Quantitative Finance,**
Advisor: Kurt Hornik.
VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS (WU VIENNA),
Faculty of Quantitative Finance, Austria
- 01/10/2017– 31/01/2020 **Master of Science in Mathematics,**
Advisor: Herwig Hauser.
UNIVERSITY OF VIENNA, Faculty of Mathematics, Austria
- 01/10/2015– 24/05/2018 **Bachelor of Science in Business Administration.**
VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS (WU VIENNA),
Faculty of Economics and Social Sciences, Austria
- 01/10/2014– 07/09/2017 **Bachelor of Science in Mathematics.**
UNIVERSITY OF VIENNA, Faculty of Mathematics, Austria

- 01/09/2006–
15/06/2014 **High School.**
Bundesrealgymnasium GRG3 Radetzkystraße, Vienna, Austria
- 01/09/2006–
15/06/2014 **High School.**
Russian Embassy School, Vienna, Austria

Scholarships

- 01/09/2021–
31/07/2023 **ÖAW DOC Fellowship P-26101,**
Title: “Integer sequences, algebraic series and differential equations”,
Total funding: 80.000€,
Austrian Academy of Sciences, Austria.
- 29/08/2023–
27/09/2023 **Bourse d’Excellence (Excellence scholarship),**
Mobility scholarship: Austria/France.
Total funding: 1.704€,
Institut français d’Autriche, Austria.
- 01/01/2021–
31/12/2022 **WTZ Austria-France Collaboration 46411Y & FR09/2021,**
Total funding: 8.000€,
Agency for Education and Internationalisation, Austria.
- 01/02/2018–
31/01/2024 **Scholarship for young talented researchers,**
Total funding: 3.000€,
Pro Scientia, Austria.
- 01/10/2015–
01/10/2020 **Scholarship of excellence (Leistungsstipendium),**
Total funding: 5.000€,
University of Vienna, Austria.
- 01/10/2016–
01/10/2020 **Scholarship of excellence (Leistungsstipendium),**
Total funding: 5.000€,
Vienna University of Economics and Business, Austria.

Competitions and Honors

- 4WARD **Third Uniqa 4WARD Math Challenge.**
“Third Place”, 500€ — Vienna, 01/06/2020.
- NCUMC **North Countries Universities Mathematical Competition.**
“First Prize” — St. Petersburg, 15/04/2018.
- IMC **International Mathematical Competition.**
“Honourable Mention” — Bulgaria, 06/08/2017,
“Third Prize” — Bulgaria, 02/08/2015, 31/07/2016 & 28/07/2018.
- VJIMC **Vojtěch Jarník International Mathematical Competition.**
“Honourable Mention” — Czech Republic, 27/03/2015, 08/04/2016 & 29/03/2019,
“Third Prize” — Czech Republic, 01/04/2017 & 13/04/2018.
- IMO **International Mathematical Olympiad.**
“Third Prize” (Bronze medal) — South Africa, 09/07/2014.
- MEMO **Middle European Mathematical Olympiad.**
“Honourable Mention” — Hungary, 22/08/2013.

Publications

Published and accepted articles

- December 2023 **“On the representability of sequences as constant terms”**, with A. Bostan and A. Straub.
In: *Journal of Number Theory*, vol 253, pp. 235–256.
DOI: doi.org/10.1016/j.jnt.2023.06.015
- July 2023 **“Beating binary powering for polynomial matrices”**, with A. Bostan and V. Neiger.
In: Proceedings of ISSAC’23, pp. 70–79, ACM Press.
DOI: doi.org/10.1145/3597066.3597118

- July 2023 “**Algebraicity for solutions of systems of functional equations**”, with H. Notarantonio.
To appear in Séminaire Lotharingien de Combinatoire, Talk at FPSAC’23, 12 pages.
- April 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
- June 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
- September 2022 “**The art of algorithmic guessing in gfun**”.
In: *Maple Transactions*, vol 2, No. 1, pp. 14421:1–14421:19.
DOI: doi.org/10.5206/mt.v2i1.14421
- 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
- 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
- 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

- July 2023 “**Algebraicity of hypergeometric functions with arbitrary parameters**”, with F. Fürnsinn.
arXiv: arxiv.org/abs/2308.12855, 21 pages.
- September 2022 “**On the First Fundamental Theorem for $GL_2(K)$ and $SL_2(K)$** ”, with H. Melánová.
arXiv: arxiv.org/abs/2009.08904, 9 pages.

Research talks and participation at conferences

For **slides** and **recordings** see: yurkevi.ch/me.html#presentations.

Invited talks at conferences

- 27/07/2023 “**Beating binary powering for polynomial matrices**”,
at Internat. Symposium on Symbolic & Algebraic Computation (*ISSAC’23*), Tromsø, Norway.
- 20/06/2023 “**The generating function of DYZ-like numbers is algebraic**”,
at Foundations of Computational Mathematics (*FoCM’23*), Paris, France.
- 07/03/2023 “**Beating binary powering for computing the N th power**”,
at Journées Nationales de Calcul Formel (*JNCF’23*), Luminy, France.
- 13/12/2022 “**Algebraic solutions of continuous and discrete differential equations**”,
at *Enumerative Combinatorics*, Oberwolfach, Germany.
- 28/11/2022 “**Creative Telescoping for the Canham model in genus one**”,
at Combinatorics and Arithmetic for Physics (*CAP’22*), Bures-sur-Yvette, IHES, France.
- 14/09/2022 “**Hypergeometric diagonals and a step towards Christol’s conjecture**”,
at *Journées du GDR EFI 2022*, Toulouse, France.
- 06/07/2023 “**Solving Rupert’s Problem Algorithmically**” (Poster presentation),
at Internat. Symposium on Symbolic & Algebraic Computation (*ISSAC’22*), Lille, France.

- 29/03/2022 “**Conjecturing & proving that the g.f. of the Yang-Zagier numbers is algebraic**”,
at Functional Equations in LIMoges (*FELIM'22*), Limoges, France.
- 28/02/2022 “**The Art of Educated Algorithmic Guessing**”,
at Journées Nationales de Calcul Formel (*JNCF'22*), Luminy, France.
- 01/12/2021 “**How to conjecture & prove that the g.f. of the Yang-Zagier numbers is algebraic**”,
at *Combinatorics and Arithmetic for Physics (CAP'21)*, Bures-sur-Yvette, IHES, France.
- 03/11/2021 “**The Art of Algorithmic Guessing (in gfun)**”,
at *Maple Conference*, Virtual, Online.
- 20/08/2021 “**The Generating Function of the Yang-Zagier Numbers is Algebraic**”,
at *Applied Algebraic Geometry (AG'21)*, Virtual, Online.
- 26/07/2021 “**Diagonals and Hypergeometric Functions**”,
at *Applications of Computer Algebra (ACA'21)*, Toulouse, France.
- 01/03/2021 “**Computing the N -th term of a q -holonomic sequence**”,
at Journées Nationales de Calcul Formel (*JNCF'21*), Luminy, France.
- Additional invited talks at seminars & workshops
- 12/10/2023 “**Biomembranes and creative telescoping**”,
at *Seminar Algebra and Discrete Mathematics*, Linz, Austria.
- 21/03/2023 “**Algebraic solutions of DDEs with one catalytic variable**”,
at *AG Diskrete Mathematik*, Vienna, Austria.
- 27/02/2023 “**Algebraic solutions of DDEs**”,
at *MathExp Seminar*, Saclay, France.
- 19/02/2023 “**Creative telescoping for periods**”,
at *Workshop on Fuchsian ODEs: “Periods”*, Lisbon, Portugal.
- 02/12/2022 “**Algebraic functions and integer sequences**”,
at *Kirchberger Workshop*, Kirchberg, Austria.
- 14/05/2022 “**On Yang-Zagier Numbers**”,
at *Workshop on Fuchsian ODEs*, Lisbon, Portugal.
- 03/05/2022 “**The generating function of the Yang-Zagier Numbers is algebraic**”
at *LFANT Seminar*, Bordeaux, France.
- 20/04/2022 “**Rupert or not Rupert?**”
at *VSM Student Retreat*, Yspertal, Austria.
- 01/12/2022 “**Algebraicity of solutions of functional equations with one catalytic variable**”,
at *Algebraic and Enumerative Combinatorics*, Waterloo, Canada.
- 22/10/2021 “**Algorithms for proving algebraicity**”,
at *Workshop: Fuchs'sche Differentialgleichungen*, Steyr, Austria.
- 25/09/2020 “**On a class of hypergeometric diagonals**”,
at *Transcendance et combinatoire*, Virtual, Online.
- 10/03/2022 “**The mysterious Apéry numbers**”
at *VSM Student Retreat*, Yspertal, Austria.
- 17/02/2020 “**Algebraic Power Series**”,
at *Workshop on the arithmetic of ODEs*, Lisbon, Portugal.
- 21/01/2020 “**Some mathematical riddles**”,
at *Workshop: Algebraic Geometry in Austria*, Seewalchen am Attersee, Austria.
- 25/10/2019 “**Künstliche Neuronale Netze**”,
at *Pro Scientia*, Vienna, Austria.
- 21/02/2019 “**Representation of Algebraic Power Series as Diagonals**”,
at *Workshop: Algebraic marvels in differential equations*, Lisbon, Portugal.
- 17/01/2019 “**Some words on the Queuing Theory**”,
at *Wesenufer Workshop*, Wesenufer, Austria.

Further participation at conferences and other scientific events

- September 2023 Summer school: “*Pro Scientia Sommerakademie*”, Puchberg, Austria.
July 2023 Conference: *FPSAC 2023*, Davis, USA.
January 2023 Conference/workshop: *Atelier E-fonctions, G-fonctions et Périodes*, Paris, France.
September 2022 Summer school: *VSM Summer School*, Techendorf am Weißensee, Austria.
April 2022 Conference: *SLC (87)*, Saint-Paul-en-Jarez, France.
March 2022 Conference: *Journées ALEA*, Luminy, France.
September 2021 Summer school: *VSM Summer School*, Techendorf am Weißensee, Austria.
September 2021 Summer school: “*Pro Scientia Sommerakademie*”, Raabs, Austria.
July 2021 Conference: *ISSAC 2021*, Saint Petersburg, Russia (Online).
June 2021 Conference: *Lattice Paths, Combinatorics and Interactions*, Marseille, France.
June 2021 Conference: *EJCIM 2021*, Virtual, Online.
March 2021 Conference: *Journées ALEA*, Luminy, France.
July 2020 Conference: *ISSAC 2020*, Kalamata, Greece (Online).
September 2019 Summer school: “*Pro Scientia Sommerakademie*”, Bozen, Italy.
July 2019 Workshop: “*Lüsens Workshop*”, Lüsens, Austria.
May 2019 Conference: “*Transient Transcendence in Transylvania*”, Braşov, Romania.
September 2018 Summer school: *VDS Summer School*, Techendorf am Weißensee, Austria.
September 2018 Conference: “*Data Science in Finance with R*”, Vienna, Austria.
September 2018 Summer school: “*Pro Scientia Sommerakademie*”, Bad Aussee, Austria.

Peer Review Activities and other scientific activities

- 2023 Referee for *Geometriae Dedicata*
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*

Languages

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