

# Curriculum Vitae

Péter Pál Pach

September 2024

## Personal Data

**Name:** Péter Pál Pach

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## Studies

**2009–2012:** PhD in Theoretical Mathematics, Eötvös Loránd University (ELTE), Budapest

**2004–2009:** MSc in Mathematics, Eötvös Loránd University (ELTE), Budapest

## Affiliation

**2024–present** head of the MTA-HUN-REN RI Lendület "Momentum" Arithmetic Combinatorics Research Group

**2024–present** HUN-REN Rényi Institute, senior research fellow

**2019–2024** head of the MTA-BME Lendület "Momentum" Arithmetic Combinatorics Research group

**2022–present** Department of Computer Science and Information Theory, Budapest University of Technology and Economics (BME), senior research fellow

**2017–2022** Department of Computer Science and Information Theory, Budapest University of Technology and Economics (BME), associate professor

**2017–2018** DIMAP, University of Warwick, research fellow (advisor: Dan Král')

**2013–2017** Department of Computer Science and Information Theory, Budapest University of Technology and Economics (BME), assistant professor

**2012–2013** Department of Computer Science and Information Theory, Budapest University of Technology and Economics (BME), assistant lecturer

## Teaching

**2015–** Aquincum Institute of Technology (AIT), in English

**2012–** Budapest University of Technology and Economics (BME), in Hungarian and in English

**2012–** Budapest Semesters in Mathematics (BSM), in English

**2006–2013** Eötvös Loránd University (ELTE), in Hungarian

## Talks

1. International Congress of Basic Science, Beijing, 2024
2. Discrete Mathematics Days, Alcalá de Henares, 2024
3. Additive Combinatorics and Fourier Analysis Workshop, Erdős Center, Budapest, 2024 (invited)

4. Summer School: Additive Combinatorics, Erdős Center, Budapest, 2024 (invited lecture series)
5. Combinatorics 2024 conference, Carovigno, 2024 (invited)
6. Combinatorial Structures and their Applications workshop, Carovigno, 2024 (invited)
7. Combinatorial Constructions Conference, Dubrovnik, 2024
8. ÖMG Tagung, Graz, 2023 (invited)
9. Combinatorial and Additive Number Theory, New York, 2023
10. 12th Japanese-Hungarian Symposium on Discrete Mathematics and Its Applications, Budapest, 2023
11. Southeastern International Conference on Combinatorics, Graph Theory & Computing, Boca Raton, 2023
12. Aart and Combinatorics, Nesin Mathematics Village (Turkey), 2023
13. Workshop on Additive Combinatorics and Algebraic Connections, Princeton, IAS, 2022 (invited)
14. Masaryk University, Mathematics Colloquium, Brno, 2022
15. Discrete Mathematics Days, Santander, 2022
16. Nordic Combinatorial Conference, Tromsø, 2022
17. Combinatorial and Additive Number Theory, New York (online), 2022
18. Colloquium on the occasion of Christian Elsholtz' 50(+1)th birthday, Graz, 2022 (invited)
19. Interfaces of the Theory of Combinatorial Limits, Budapest, 2022
20. Southeastern International Conference on Combinatorics, Graph Theory & Computing, Boca Raton, 2022
21. The 1st Workshop on Developments in Combinatorics, Shandong University (online), 2021 (invited)
22. Virtual Discrete Math Colloquium, DIMAG, South Korea (online), 2021 (invited)
23. EuroComb, Barcelona (online), 2021 (prize lecture)
24. Developments in Computer Science, Budapest (online), 2021 (invited)
25. Combinatorial and Additive Number Theory, New York (online), 2021
26. 7th International Conference on Uniform Distribution Theory, Linz (online), 2021 (invited)
27. Additive Combinatorics, CIRM, Luminy (hybrid), 2020 (invited)
28. Combinatorial and Additive Number Theory, New York (online), 2020
29. One day Meeting on Extremal Combinatorics, EWHA University, Seoul, 2020 (invited)
30. Zero-Sum Ramsey Theory: Graphs, Sequences and More, Oaxaca, 2019 (invited)

31. IBS One-Day Conference on Extremal Graph Theory, Daejeon, 2019 (invited)
32. The 11th Hungarian-Japanese Symposium on Discrete Mathematics and Its Applications, Tokyo, 2019 (invited)
33. London Colloquia in Combinatorics, 2019 (invited)
34. FU Berlin, Colloquium, 2019 (invited)
35. One day workshop on Extremal Combinatorics, EWHA University, Seoul, 2019 (invited)
36. Additive combinatorics, Linz, 2018 (invited)
37. Mathematics Colloquium, TU Graz, 2018 (invited)
38. Arithmetic Ramsey Theory in Manchester, 2018 (invited)
39. Prague Summer School on Discrete Mathematics 2018 (invited lecture series)
40. The Joint International Meeting of the Chinese Mathematical Society and the American Mathematical Society, 2018 (invited)
41. Combinatorial and Additive Number Theory, New York, 2018
42. 10 Year Anniversary DIMAP Workshop, University of Warwick, 2017
43. Workshop on Algebraic Methods in Combinatorics, Harvard, 2017 (invited)
44. Vilnius Conference in Combinatorics and Number Theory, Vilnius, 2017
45. Journées Arithmétiques, Caen, 2017
46. CanaDAM, Toronto, 2017 (invited minisymposium talk)
47. 10th Japanese-Hungarian Symposium on Discrete Mathematics and Its Applications, Budapest, 2017
48. Polynomial method workshop, Jerusalem, 2016 (invited)
49. Polynomial method workshop, Bristol, 2016 (invited)
50. Conference on elementary and analytic number theory, Strobl am Wolfgangsee, 2016
51. Combinatorial and Additive Number Theory, New York, 2016
52. Additive Combinatorics in Bordeaux, 2016
53. Combinatorial and Additive Number Theory, Graz, 2016
54. 9th Hungarian-Japanese Symposium on Discrete Mathematics and its Applications, Fukuoka, 2015
55. Summit:240 Conference, Budapest, 2014
56. International colloquium on graph theory and combinatorics, Grenoble, 2014
57. Paul Turán Memorial Conference, Budapest, 2011
58. Artic Number Theory School, Helsinki, 2011
59. International Congress of Mathematicians (Poster section), Hyderabad, India, 2010
60. Number Theory and its Applications, Debrecen, 2010
61. Summer School on General Algebra and Ordered Sets, Malenovice, 2010
62. International Conference on Algebras and Lattices, Prague, 2010
63. Combinatorics, Groups, Algorithms, and Complexity, Columbus, Ohio, 2010

## Seminar Talks

1. TU Graz, Number Theory Colloquium, 2022
2. Bordeaux, Graph Theory Seminar, 2022
3. University of Warwick, Combinatorics Seminar, 2022
4. Virtual Algebraic Graph Theory Seminar, University of Waterloo, 2022 (online)
5. Rényi Institute, Algebra Seminar, 2021
6. TU Graz, Number theory seminar, 2021 (hybrid)
7. Rényi Institute, Number Theory Seminar, 2021 (online)
8. University of Bristol, Combinatorics Seminar, 2021 (online)
9. Extremal and Probabilistic Combinatorics Webinar, 2020
10. Masaryk University, Brno, Joint DIMEA and FORMELA Seminar, 2019
11. University of Warwick, Combinatorics Seminar, 2019
12. University of Warwick, DIMAP Seminar, 2019
13. University of Birmingham, Combinatorics Seminar, 2019
14. FU Berlin, Combinatorics Seminar, 2019
15. Rényi Institute, Number Theory Seminar, 2018
16. University of Bristol, Heilbronn Number Theory Seminar, 2018
17. University of Bristol, Combinatorics Seminar, 2018
18. University of Warwick, DIMAP Seminar, 2017
19. University of Birmingham, Combinatorics Seminar, 2017
20. London School of Economics, Seminar on Combinatorics, Games and Optimisation, 2017
21. University of Warwick, Combinatorics Seminar, 2017
22. PTE, Mathematics Seminar, 2017
23. ELTE, Analysis Seminar, 2016
24. ELTE, Finite Geometry Seminar, 2016
25. Rényi Institute, Combinatorics Seminar, 2016
26. Rényi Institute, Number Theory Seminar, 2016
27. BME, SZIT Seminar, 2012
28. ELTE, Algebra Seminar, 2011
29. ELTE, Algebra Seminar, 2009

## Prizes, scholarships

1. Frontiers of Science Award (2024)
2. Paul Erdős Prize (2023)
3. European Prize in Combinatorics (2021)
4. Bolyai plaque (2020)
5. Excellent Teacher of the Faculty, silver degree (2016)
6. János Bolyai Research Scholarship (2015-2019)
7. Géza Grünwald Commemorative Prize (2015)
8. Erdős Pál Young Researcher Scholarship (2014)
9. Honourable Mention of the Dean (2013)
10. Sport and Education Scholarship (2011)
11. International Mathematics Competition for University Students, First prize, member of the winning team of ELTE (Blagoevgrad, 2008)
12. Excellent Student of the Faculty Award (2008)
13. Vojtěch Jarník International Mathematical Competition, 8th place (Ostrava, 2008)
14. Miklós Schweitzer Memorial Competition, honourable mention (2007)
15. International Mathematics Competition for University Students, First prize, member of the winning team of ELTE (Blagoevgrad, 2007)
16. Fellowship granted by the Republic of Hungary (2007-2008)
17. Miklós Schweitzer Memorial Competition, Third Prize (2006)
18. International Mathematics Competition for University Students, First prize (Odessa, 2006)
19. Vojtěch Jarník International Mathematical Competition, 4th place (Ostrava, 2006)
20. Operation Research Competition, First Prize (2005)
21. Miklós Schweitzer Memorial Competition, honourable mention (2005)
22. International Mathematics Competition for University Students, First prize (Blagoevgrad, 2005)
23. Fazekas Medal of Honour (2004)
24. Scholarship of the Prime Minister of Hungary (2005)
25. Scholarship of the Prime Minister of Hungary (2004)
26. International Mathematical Olympiad, First Prize (Athens, 2004)
27. International Mathematical Olympiad, Second Prize (Tokyo, 2003)

## Research projects

1. Lendület (Momentum) Grant (2024-2029), MTA–HUN-REN RI Lendület (Momentum) Arithmetic Combinatorics Research Group, principal investigator
2. Hungarian Scientific Research Fund (NKFIH) K146387 Additive number theory and Fourier analysis (2024-2027), investigator
3. Lendület (Momentum) Grant (2019-2024), MTA-BME Arithmetic Combinatorics Research Group, principal investigator
4. Hungarian Scientific Research Fund (NKFIH) K129335 Additive problems (2019-2024), investigator
5. Hungarian Scientific Research Fund (NKFIH) K124171 Optimal Mapping of Communication Services onto Cloud Computing Architectures Based on Discrete Mathematical Methods (2017-2021), investigator
6. Hungarian Scientific Research Fund (OTKA) PD115978 Applications of Combinatorics in Multiplicative Number Theory (2015-2019), principal investigator
7. Hungarian Scientific Research Fund (OTKA) K108947 Optimization Methods for Cloud Computing and Communications (2013-2018), investigator
8. Hungarian Scientific Research Fund (OTKA) NK67867 Discrete and Continuous: interfaces between graph theory, algebra, analysis and geometry (2010), investigator

## Role in Scientific Community

1. 2020–present editor of *Studia Scientiarum Mathematicarum Hungarica*
2. 2005–present: member of the Editorial Board of *Kömal*
3. 2009–present: member of the Kürschák Competition Committee, 2019–2023: the chair of the committee
4. 2014–present: member of the Hungarian National Mathematical Olympiad (OKTV) Committee, from 2021 the chair of the committee
5. refereeing for *Acta Arithmetica*, *Acta Mathematica Hungarica*, *Advances in Combinatorics*, *Advances in Mathematics*, *Australasian Journal of Combinatorics*, *Bulletin of the London Mathematical Society*, *Combinatorica*, *Colloquium Mathematicum*, *Crelle*, *Demonstratio Mathematica*, *Discrete Analysis*, *Discrete Applied Mathematics*, *Discrete Mathematics*, *European Journal of Combinatorics*, *Finite Fields and their Applications*, *Forum of Mathematics Sigma*, *Integers*, *Israel Journal of Mathematics*, *Journal of Number Theory*, *Journal of Combinatorial Theory Series A*, *Mathematische Annalen*, *Linear Algebra and Its Applications*, *Mathematische Nachrichten*, *Periodica Mathematica Hungarica*, *Proceedings of the American Mathematical Society*, *Proceedings of the London Mathematical Society*, *The Ramanujan Journal*  
reviewing for *MathSciNet* and *Zentralblatt*
6. Organizer of REU programs (2020, 2021, 2022, 2023, 2024)
7. 2021–present: member of the Hungarian Young Academy (FKA)