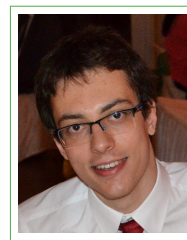


# Jędrzej Garnek

## Curriculum vitae

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🌐 <http://jgarnek.faculty.wmi.amu.edu.pl>



### Employment

- 2022 – 2024 **Institute of Mathematics of Polish Academy of Sciences, Warsaw**, *postdoc*.  
2020 – 2022 **Adam Mickiewicz University in Poznan, Poland**, *assistant professor*.

### Education

- 2016 – 2020 **PhD Programme in Mathematics**, *Adam Mickiewicz University, Poznań, Poland*.  
Doctoral thesis: „*Abelian varieties over  $p$ -adic fields*”, supervisor: prof. Wojciech Gajda  
2016 **Master thesis „On arithmetics of elliptic curves”**, *under the supervision of prof. Wojciech Gajda, Poznań, Poland*.  
2011 – 2016 **M. Sc. Programme in Mathematics**, *Adam Mickiewicz University, Poznań, Poland*.

### Publications

- [1] J. Garnek. On  $p$ -degree of elliptic curves. *Int. J. Number Theory*, 14(3):693–704, 2018.
- [2] J. Garnek. On class numbers of division fields of abelian varieties. *J. Théor. Nombres Bordeaux*, 31(1):227–242, 2019.
- [3] J. Garnek. Equivariant splitting of the Hodge-de Rham exact sequence. *Mathematische Zeitschrift*, 300(2):1917–1938, 2022.
- [4] J. Garnek.  $p$ -group galois covers of curves in characteristic  $p$ . *Accepted at Trans. Amer. Math. Soc.*, 2023.
- [5] J. Garnek. Products of hyperelliptic Jacobians with maximal Galois image. *arXiv:2207.01951*, submitted, 2023.

### Research grants and internships

- Jan.-Apr. 2023 internship at Institut de Mathématiques de Jussieu-Paris Rive Gauche (Paris)  
2022 – 2024 Polish National Science Centre research grant SONATINA “*The de Rham cohomology of  $p$ -group covers*”  
2022 grant “50x50”, a part of the “Initiative of Excellence – Research University” project on Adam Mickiewicz University.  
2018 – 2020 Polish National Science Centre research grant PRELUDIUM “*Abelian varieties over  $p$ -adic fields*”

### Prizes and Awards

- 2022 **Praeceptor Laureatus award for best academic teachers**, *Adam Mickiewicz University, Poznan*.

- 2017 **Nicolai Copernici International Students Contest**, *silver medal and 1st prize award*, AGH University of Science and Technology, Kraków, Poland.
- 2017 **J. Marcinkiewicz Award for the Outstanding Undergraduate Mathematical Paper**, *First Prize*, organiser: Polish Mathematical Society.
- 2012–2016 **Jarník International Mathematical Competition**, *Ostrava*, Czech Republic, website of the competition: <http://vjimc.osu.cz/>.
- 2014, 2nd place in Category II
  - 2015, 4th place in Category II
  - 2016, 6th place in Category II
- 2014 – 2016 **International Mathematics Competition for University Students**, Blagoevgrad (Bulgaria), website: <http://www.imc-math.org.uk/>.
- 2013 & 2014, Second Prize,
  - 2015, First Prize (25th place).
- 2011 **LXII Polish Mathematical Olympiad**, *9th place*, Bielsko Biała, Poland.

## Scholarships

- 2016 – 2017 Scholarship of Kulczyk Family Fund, Adam Mickiewicz University
- 2016 – 2017 Scholarship of Jan Kulczyk
- 2015 Scholarship of the Santander Universidades Foundation „Studencki Laur”
- 2013, 2014, 2015 Ministry of Science and Higher Education Award for scientific achievements
- 2011 – 2012 Scholarship of the Poznan City

## Selected Talks

- 2023 **HKG-curves and cohomologies of  $p$ -group covers**, *Séminaire de théorie des nombres de l'IMJ-PRG*, Institut de Mathématiques de Jussieu-Paris Rive Gauche, Paryż.
- 2022  **$p$ -group Galois cover of curves in characteristic  $p$** , *Number Theory Seminar of the Institute of Mathematics of Polish Academy of Sciences*, Warsaw.
- 2022 **Cohomology of  $p$ -group covers**, *FRAGMENT (Front Range Algebraic Geometry and Number Theory) Seminar*, Colorado State University, Fort Collins.
- 2021  **$p$ -group covers of curves in characteristic  $p$** , *online Algebraic Geometry Seminar of prof. Cynk*, Jagiellonian University.
- 2021  **$p$ -group covers of curves in characteristic  $p$** , *online Number Theory seminar of the Institut des Mathématiques de Jussieu (Paris)*.
- 2019 **Torsja rozmaitości abelowych nad ciałami  $p$ -adycznymi**, *Sierpiński session, Jubilee Congress for the 100th anniversary of the Polish Mathematical Society*, Kraków, Poland.
- 2019 **Equivariant splitting of the Hodge–de Rham exact sequence**, *Rosenblatt session, Jubilee Congress for the 100th anniversary of the Polish Mathematical Society*, Kraków, Poland.
- 2019 **Equivariant splitting of the Hodge–de Rham exact sequence**, *conference “Arithmetic of Connections”*, Ascona, Switzerland.
- 2019 **Equivariant splitting of the Hodge–de Rham exact sequence**, *Summer School on Perfectoid Spaces*, Rennes, France.
- 2018 **Class numbers of division fields of abelian varieties**, *Joint meeting of the Italian Mathematical Union, the Italian Society of Industrial and Applied Mathematics and the Polish Mathematical Society*, Wrocław, Poland.
- 2018 **Class numbers of division fields of abelian varieties**, *Summer School on Explicit and computational approaches to Galois representations*, Luxembourg.

- 2018 **Local torsion of elliptic curves**, conference “Torsion groups and Galois representations of elliptic curves”, Zagreb, Croatia.
- 2017 **Abelian varieties over  $p$ -adic fields**, prof. Schinzel’s Number Theory Seminar.
- 2017 **Hilbert’s Irreducibility Theorem**, 20th International Workshop for Young Mathematicians “Number Theory”, Kraków, Poland.
- 2016 **Elliptic curves over rings**, 19th International Workshop for Young Mathematicians “Algebraic Geometry”, Kraków, Poland.
- 2016  **$p$ -degree of an elliptic curve**, Summer School of Mathematics and Informatics, Toruń, Poland.
- 2016 **On the advantages of completeness**, Mathematics Student Conference  $\theta\beta\lambda\iota\zeta\epsilon$ , Poznań, Poland.
- 2015 **Complex multiplication of elliptic curves**, Mathematics Student Conference  $\theta\beta\lambda\iota\zeta\epsilon$ , Poznań, Poland.
- 2014 **Balanced diet algorithm**, Workshop on Modern Applied Mathematics, Kraków, Poland.

## Posters

- 2019, 2020 **Equivariant splitting of the Hodge–de Rham exact sequence.**
- K-theory, algebraic cycles and motivic homotopy theory: Introductory Workshop, Cambridge,
  - Derived Categories and Geometry in Positive Characteristic, Warsaw,
  - British Algebraic Geometry Meeting, Liverpool,
  - Summer School on Perfectoid Spaces, Rennes.
- 2019 **Class numbers of division fields of abelian varieties**, conference Iwasawa 2019, Bordeaux, France.

## Selected attended Workshops and Conferences

- 2017 **Curves and L-functions**, summer school and conference, Trieste (Italy).
- 2015 **The 18th International Workshop for Young Mathematicians „Algebraic and Differential Topology”**, Krakow (Poland).
- 2015 **Summer School on Perfectoid Spaces**, Brixen (Italy).
- 2015 **French-German Summer School „Galois Theory and Number Theory”**, Konstanz (Germany).
- 2014 **Riemann Master School on  $\zeta$ eta Functions**, Hannover (Germany).

## Teaching Experience

- 2021/2022 Algorithms and data structures, computer labs and problem sessions, undergraduate course
- 2020/2021, 2021/2022 Introduction to algebra and number theory, lectures and problem sessions, undergraduate course
- 2020/2021, 2021/2022 Cryptography with elements of algebra, problem sessions, undergraduate course
- 2021, 2022 supervising bachelor theses: “Elliptic curves and Lenstra algorithm”, “Mathematics of Rubik’s cube” and “Markov chains and board games”
- 2020/2021 Linear algebra, problem sessions, undergraduate course
- 2017/2018, 2018/2019, 2019/2020 Review of elementary mathematics, problem sessions, undergraduate course

2016/2017 Galois theory with an introduction to algebraic number theory, problem sessions, undergraduate course

2016/2017 Elements of applied mathematics, problem sessions, undergraduate course (held in English)

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### Additional activities

2014 – 2016 President of the Society of Mathematicians - Students of Adam Mickiewicz University

since 2014 Organiser of the Mathematics Student Conference "Oblicze"

2012, 2014 Poznań Research in Industrial Projects for Students

since 2013 member of a local Committee of Polish Mathematical Olympiad

since 2012 member of the Organising Committee of *Wielkopolska Liga Matematyczna* (a high school competition), <http://wlm.wmi.amu.edu.pl>

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### Additional skills

Languages 

- *English – reading, writing, speaking fluent,*
- *German – reading, writing, speaking good.*

Programming C++, Python, R,  $\LaTeX$ , Sage, Magma