

Artem Semidetnov

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Research Interests

- Group theory (Nilpotent groups, homologies of groups)
- Simplicial homotopy theory (Simplicial models for spheres based on braid groups)
- Barratt-Priddy-Quillen type theorems

Education

BS	Saint-Petersburg State University , Mathematics	2021 – 2025
BS	Neapolis University Of Pafos , Applied Computer Science JetBrains Program	2022 – 2024
M.Sc	University of Geneva , Mathematics	2025 – 2027

Publications

On the geometry of free nilpotent groups ↗	May 2021
<i>Artem Semidetnov</i> , Ruslan Magdiev	
https://doi.org/10.48550/arXiv.2106.00095 ↗	
Abstract Thompson's groups (to appear)	2025
<i>Artem Semidetnov</i>	
On the localization of groups with respect to a ring (to appear)	
Sergei O. Ivanov, Georgii Kadantsev, Aleksandr Krasilnikov, <i>Artem Semidetnov</i>	

Awards and Scholarships

Scholarship by "Rodnye Goroda" (a social investment program of PJSC "Gazprom нефт"), 2023-2024

JetBrains Scholarship in Neapolis University

Travel grant of Chebyshev laboratory for [Winter student school in mathematics and CS of HSE and MCS](#) [↗](#), Moscow

Excellence fellowship in Geneva University 2025

Teaching Experience

Sirius educational center , Teaching assistant on the course " Groups of intermediate growth " ↗	Sochi, Russia Apr 2024 – May 2024
Laboratory for continuous mathematical education , mathematics teacher for gifted students	Saint-Petersburg, Russia 2021 – 2023
Mathematics and Computer Science faculty program for prospective students , Teaching assistant on the course "Braid and knot theory"	Saint-Petersburg, Russia June 2023

Selected Talks

On the geometry of free nilpotent groups	Novosibirsk, Russia 2021
• Siberian summer conference	
"On the Poisson boundary of lamplighter groups" ↗	Saint-Petersburg, Russia
• St. Petersburg Seminar on Representation Theory and Dynamical Systems	

"Twisting numbers on braid and Thompson's groups" [↗](#)

- Topological Methods in Dynamics and Related Topics VII

N. Novgorod, Russia
2024

"Plus construction and simplicial methods" [↗](#)

- Conference "Algebraic Topology, geometry, combinatorics, and data analysis" [↗](#)

Pushkin, Russia
Aug 2025

Work Experience

JetBrains, Research Intern in HoTT and Dependent Types Lab

- I was developing the official library in the Arend language. I formalized different results in algebra and homotopy type theory, including following.
- Formalized Eckmann-Hilton argument, Eilenberg-MacLane spaces, Homologies of types.
- Formalized automorphisms of groups, Schur's Lemma, Maschke's Lemma, Group actions characterizations. (Some of these results are in the [1.10 release](#) [↗](#)).

Pafos, Cyprus
June 2024 – Sept 2024

IPONWEB (acquired by Criteo), Machine Learning Intern

- Criteo has a ML tool that analyzes sites and produces word-2-vec representations. In IPONWEB I was trying to reverse-engineer the behaviour of this tool and analyze its possible applications.

Pafos, Cyprus
May 2023 – Sept 2023

Miscellaneous

- Finalist of 2020 Intel ISEF
- Intel ISEF alumni
- Winner of 2019 Baltic SEF, PDMI special prize in 2019 Baltic SEF
- 3rd team place in 2019 [International Tournament of Young Mathematicians](#) [↗](#) in Barcelona, Spain
- Organizer of the [Euler International Mathematical Institute's functional analysis seminar](#) [↗](#)
- English level C1 (IELTS 8.0/9, taken in 2020, 2024)
- Invited judge in Saint-Petersburg Tournament of Young Mathematicians (since 2021)
- Created mathematical problem for 2024 International Tournament of Young Mathematicians ([10th in here](#) [↗](#)).
- Invited judge in International Tournament of Young Mathematicians 2024
- [A member of Scientific Organization Committee in ETEAM 2025](#) [↗](#)