Artem Semidetnov

⚲ Saint-Petersburg   ✉ artemsemidetnov@gmail.com   ☏ 8 (921) 363-89-09

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	**Saint-Petersburg State University**, Mathematics	2025 – 2027

Publications

On the geometry of free nilpotent groups ⧉　　　　　　　　　May 2021

Artem Semidetnov, Ruslan Magdiev

https://doi.org/10.48550/arXiv.2106.00095 ⧉

Abstract Thompson's groups (to appear)　　　　　　　　　　2025

Artem Semidetnov

Polynomial functors from representations (to appear)　　　　2025

Vladislav Romanovskii, *Artem Semidetnov*

Operads from crossed simplicial groups　　　　　　　　　　2025

Artem Semidetnov

On the localization of groups with respect to a ring (to appear)

Sergei O. Ivanov, Georgii Kadantsev, Aleksandr Krasilnikov, *Artem Semidetnov*

Awards and Scholarships

Scholarship by "Rodnye Goroda" (a social investment program of PJSC "Gazprom neft"), 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

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 - Siberian summer conference	Novosibirsk, Russia 2021

"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" ⬀   N.Novgorod, Russia
- Topological Methods in Dynamics and Related Topics VII   2024

"Plus construction and simplicial methods" ⬀   Pushkin, Russia
- Conference "Algebraic Topology, geometry, combinatorics, and data analysis" ⬀   Aug 2025

Work Experience

JetBrains, Research Intern in HoTT and Dependent Types Lab   Pafos, Cyprus
    June 2024 – Sept 2024
- 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 ⬀).

IPONWEB (acquired by Criteo), Machine Learning Intern   Pafos, Cyprus
    May 2023 – Sept 2023
- 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.

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 ⬀