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-Qillen 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
Artem Semidetnov, Ruslan Magdiev
https://doi.org/10.48550/arXiv.2106.00095

Abstract Thompson's groups (to appear) 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

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

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