

# Artem Semidetnov

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## Education

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| <b>BSc</b> | <b>Saint-Petersburg State University</b> , Mathematics                           | 2021 – 2025 |
| <b>BSc</b> | <b>Neapolis University Of Pafos</b> , Applied Computer Science JetBrains Program | 2022 – 2024 |
| <b>MSc</b> | <b>Geneva University</b> , Mathematics   | 2025 – 2027 |

## Work Experience

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| <b>JetBrains</b> , Research Intern in HoTT and Dependent Types Lab  | Remote<br>Nov 2025 – present           |
| <b>JetBrains</b> , Research Intern in HoTT and Dependent Types Lab <ul style="list-style-type: none"> <li>I was developing the official library in the Arend language. I formalized different results in algebra and homotopy type theory, including following.</li> <li>Formalized Eckmann-Hilton argument, Eilenberg-Maclane spaces, Homologies of types.</li> <li>Formalized automorphisms of groups, Schur's Lemma, Maschke's Lemma, Group actions characterizations. (Some of these results are in the <a href="#">1.10 release ↗</a>).</li> </ul> | Pafos, Cyprus<br>June 2024 – Sept 2024 |
| <b>IPONWEB (acquired by Criteo)</b> , Machine Learning Intern <ul style="list-style-type: none"> <li>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.</li> </ul>   | Pafos, Cyprus<br>May 2023 – Sept 2023  |

## Publications

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| <b>On the geometry of free nilpotent groups ↗</b>   | May 2021 |
| <b>Artem Semidetnov</b> , Ruslan Magdiev<br><a href="https://doi.org/10.48550/arXiv.2106.00095">https://doi.org/10.48550/arXiv.2106.00095 ↗</a> |          |
| <b>The operad associated to a crossed simplicial group ↗</b>  | Dec 2025 |

## Awards and Scholarships

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| 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 <a href="#">Winter student school in mathematics and CS of HSE and MCS ↗</a> , Moscow |
| Excellence Master Fellowship at Geneva University ↗  |

## Teaching Experience

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

## **Selected Talks**

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### **On the geometry of free nilpotent groups**

- Siberian summer conference

Novosibirsk, Russia

2021

### **"On the Poisson boundary of lamplighter groups"** ↗

- St. Petersburg Seminar on Representation Theory and Dynamical Systems

Saint-Petersburg, Russia

### **"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

## **Miscellaneous**

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- 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, 2025
- [A member of Scientific Organization Committee in ETEAM 2025](#) ↗