

Education

- 2024 – Present **Master's degree**, *ETH Zurich*
Two years programme Computer Science, Major: Theoretical Computer Science, Minor: Computational Intelligence.
- 2021 – 2024 **Bachelor's degree**, *Faculty of Mathematics and Physics, Charles University*
Three years programme Computer Science, branch General Computer Science.
Received scholarship for excellent grades every year. Graduated *summa cum laude*.
Thesis: Masked superstrings for efficient k -mer set representations and indexing.
○ 1st place in thesis competition SVOČ 2024 (Czechia & Slovakia)
○ Awarded best computer science thesis (Charles University)
Supervisors:
○ Pavel Veselý, Computer Science Institute, Charles University
○ Karel Břinda, Inria/Irisa Rennes
- 2013 – 2021 *Gymnázium, Plzeň*
Selective secondary school. Graduated with honors.

Awards

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| 2× Bronze medal | International Olympiad in Informatics | 2021, 2020 |
| 32th | Central-European Olympiad in Informatics | 2020 |
| 42th | ICPC — European Championship | 2024 |
| 14th, 18th | ICPC — Central European Regional Contest | 2023, 2022 |
| 1st, 1st | ICPC — CTU Open (60 teams, Czechia & Slovakia) | 2023, 2022 |
| 2nd | Cloudflight Coding Challenge (1200 teams, Europe) | 2023 |
| 17th | Reply Code Challenge (4000 teams, worldwide) | 2023 |

Publications

- [1] Sladký, O, Veselý P., & Břinda K. Masked superstrings as a unified framework for textual k -mer set representations. *RECOMB-seq* (2023).
- [2] Sladký, O, Veselý P., & Břinda K. Towards efficient k -mer set operations via function-assigned masked superstrings. *bioRxiv* (2024).
- [3] Sladký, O, Veselý P., & Břinda K. FroM Superstring to Indexing: a space-efficient index for unconstrained k -mer sets using the Masked Burrows-Wheeler Transform (MBWT). *bioRxiv* (2024).

Experience

Work experience

- 2022 – Present **Student Researcher**, *Computer Science Institute, Charles University*
Research topics: Design of efficient representations and data structures for k -mer sets.
Supervisors: Pavel Veselý and Karel Břinda

- Jul – Sep 2024 **Bioinformatics Intern**, *Eligo Bioscience, France*
Designed and implemented an efficient tool for DNA optimization.
- Jun – Jul 2023 **Research Intern**, *DIMACS, Rutgers University, New Jersey, USA*
Research topic: Winning strategy partial proofs for division game (combinatorial game)
Supervisor: Bhargav Narayanan, Department of Mathematics, Rutgers University
- Jul – Sep 2022 **STEP Intern**, *Site Reliability Engineering team, Google Germany*
Designed and implemented a Go library and API using it for automated remediations of SRE Best Practices violations.
- Jun – Sep 2021 **Research Intern**, *CIMRA group, West Bohemian University*
Research topic: Electromagnetic oven for creation of minirobots from elastomers.
Supervisor: František Mach
- Jul – Nov 2018 **Software Engineering Intern**, *Arcdata Praha*
Developed a prototype of a mobile navigation app for Pilsen Zoo in Xamarin (C#).
Presented at the Czech GIS ESRI Conference 2018.

Voluntary work

- 2023 – 2024 **Scientific Comitee Member**, *CEOI 2024*
Central-European Olympiad in Informatics.
Responsibility: Creation of competition problems.
- 2022 – 2024 **Lead Organizer**, *Czech Selection Camp in Informatics*
Selection camp for international olympiads in informatics.
Responsibility: Leading a team of over 10 organizers.
- 2021 – 2024 **Organizer**, *Czech Olympiad in Informatics*
Czech preliminary round to International Olympiad in Informatics.
Responsibility: Creation of competition tasks and grading the participants' solutions.
- 2021 – 2024 **Organizer**, *KSP, Faculty of Mathematics and Physics, Charles University*
A monthly computer science competition for secondary school students.
Responsibility: Creation of algorithmic problems and co-organization of educational camps.

Projects

- 2023 – Present **Co-founder**, *AiAiEyes*
AiAiEyes — AI based app helping the visually impaired to recognize everyday objects.
Cooperation with Czech Blind United (SONS).
First price at Microsoft AI Accessibility Hackathon 2023 in Prague.

Talks

- Masked superstrings as a unified framework for textual k -mer set representations, *RECOMB-seq 2023*
- Masked superstrings as a datatype for k -mer sets, *Inria, Rennes, 2024*
- Masked superstrings as a unified framework for textual k -mer set representations, *Sequences in London 2024*
- Masked superstrings as a unified framework for textual k -mer set representations, *Bioinformatics seminar, Charles University*