Mariia Soroka

Email: ms3663@cornell.edu
GitHub: https://github.com/mariasoroka
LinkedIn: www.linkedin.com/in/masha-soroka

Education

2023 – Now	**Ph.D. in Computer Science,** Cornell University Advisor: Steve Marschner
2021 – 2023	**M.Sc. in Applied Mathematics,** EPFL, GPA: 5.63 / 6
2017 – 2021	**B.Sc. in Applied Mathematics and Physics,** MIPT, GPA: 4.96 / 5 Graduation with Honors
2013 – 2017	**Student,** Lyceum School №2 (top tier physics & math's Russian school), GPA: 5 / 5 Graduation with distinction

Experience

May '23 – Sep '23	**Master Thesis: Path Guiding in Application to Differentiable Rendering** (5.75 / 6) Research oriented project supervised by Prof. Wenzel Jakob and Prof. Nicolas Boumal. Explored how path guiding techniques developed for physically based rendering can be used in inverse rendering pipeline to improve the reconstruction quality.
Jan '22 – Apr '23	**Intel Graphics Research,** Research Intern Project on differentiable rendering supervised by Christoph Peters. Resulted in SIGGRAPH 2025 paper.
Mar '22 – Oct '22	**Realistic Graphics Lab,** EPFL, Student Assistant Studied properties of attached and detached estimators in differentiable rendering. Explored different approaches to variance reduction. Supervised by Prof. Wenzel Jakob.
Sep '21 – Mar '22	**Semester project: Efficient evaluation of rough microfacet BSDFs** (5.75 / 6) Explored ways to improve energy conservation properties of rough microfacet BSDFs. Supervised by Prof. Wenzel Jakob.
Sep '20 – Jul '21	**Bachelor Thesis: Modelling of neck and shoulder biomechanics** (10/10) Marchuk Institute of Numerical Mathematics of the Russian Academy of Sciences Worked on a physically plausible musculoskeletal model of the neck and shoulder. Personalized the model using motion capture data. Supervised by Victoria Salamatova.

Publications

SIGGRAPH 2025	**Quadric-Based Silhouette Sampling for Differentiable Rendering** Mariia Soroka Christoph Peters Steve Marschner

Teaching Experience

Jan '25 – May '25	**Teaching Assistant,** Cornell University CS 6682: Computation for Content Creation. Course on techniques related to the creation and manipulation of digital content.
Jan '24 – May '24	**Teaching Assistant,** Cornell University CS 4220 / MATH 4260: Numerical Analysis. Course on the fundamentals of numerical linear algebra and optimization techniques.
Aug '23 – Dec '23	**Teaching Assistant,** Cornell University CS 6210: Matrix Computations. Graduate level course on computational linear algebra.

Scholarships and Awards

May 9, 2024	**Teaching Assistant Achievement Award (Cornell Bowers CIS)** For outstanding accomplishments and contributions as a teaching assistant
2018 - 2020	**Abramov's Fellowship,** awarded three times Top 7% of students during the first three years (MIPT)
Fall 2017	**Moscow Government scholarship** For those who have the school award "For Excellence in Learning"

Other Projects

Spring 2022 **Advanced Computer Graphics (CS-440),** Course project at EPFL
Implemented a path tracer with multiple importance sampling, image based lighting, thinlens camera, homogeneous participating medium, and various types of BSDFs supporting textured parameters and normal maps.

Skills

Languages: English (IELTS 8), Russian (Native), French (Beginner)
Programming: C++, Python, Mathematica, Matlab, Latex

Miscelaneous

2017 **Prizewinner of the National Olympiad** | **Russian Language**
2015 **Winner of the Vernadsky National Student Research Project Contest**
Chemistry | Synthesis of manganese(II) sulfate pentahydrate from used batteries
2014 – 2017 **Winner/prizewinner of olympiads in math and physics (Moscow or state level)**