Szymon Gustav Snoeck

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Education

Columbia University — New York, NY
Bachelor of Science, Applied Mathematics. Minor in Computer Science. GPA: 4.00 — 2022 - 2026
Dean's List (2022-2024)

BASIS Independent Brooklyn — New York, NY
High School Diploma. GPA: 4.00 — 2018 - 2022
Graduated Salutatorian. Honor Roll (2018 - 2022)

Relevant Coursework

APMA E2000: Multi-variable Calculus For Engineers (Calculus III and IV equivalent)
PHYS UN2801: Accelerated Physics I
PHYS UN2802: Accelerated Physics II
MATH UN2010: Linear Algebra
STAT UN1201: Calc-Based Intro to Statistics
MATH S4061: Intro to Modern Analysis I
MATH S4062: Intro to Modern Analysis II
MATH GU4041: Into to Modern Algebra I
MATH GU4042: Intro to Modern Algebra II
MATH UN2030: Ordinary Differential Equations
COMS W4252: Intro to Computational Learning Theory
APMA E4300: Computational Math: Intro to Numerical Methods
MATH GU4155: Probability Theory
COMS W4771: Machine Learning (Audited)
COMS E6998: Unconditional Lower Bounds and Derandomization
COMS W4281: Intro to Quantum Computing
COMS W4774: Unsupervised Learning
MATH GU4051: Topology
MATH GU4065: Honor Complex Variables
COMS E6998: Theory of Large Language Models (In Progress)
MATH GU4045: Algebraic Curves (In Progress)
MATH GU4156: Advanced Probability Theory (In Progress)

Experience

Guided Research Project with Prof. Nakul Verma — Columbia University, New York, NY
Dimension Reduction Theory Research — February 2023 – Present

- Began dimension reduction research spring semester freshman year
- Proved Johnson–Lindenstrauss lemma for subspaces as an introduction to theoretical comp-sci (TCS) research
- Read dozens of papers and textbook excerpts detailing famous results in TCS and dimension reduction
- Currently working on two theory papers which we hope to have published before the end of the summer

SUMMER@SEAS Research Project with Prof. Yuri Faenza — Columbia University, New York, NY
Online Matching Theory Research — June 2024 – August 2024

- Studied online bipartite matching and welfare functions
- Proved that there does not exist a constant-factor approximation algorithm for online bipartite matching with respect to the Nash Social Welfare function

Computer Science Department — Columbia University, New York, NY
Machine Learning Teaching Assistant — January 2024 – Present

- Hold office hours and tutor students in applied and theoretical machine learning
- Develop intuitive approaches to complex topics to make them palatable for a range of mathematical backgrounds

- Coordinate with a team of TAs to create rubrics, write solutions, and grade assignments

Peer Tutoring BASIS Independent Brooklyn, New York, NY
Peer Tutor September 2019 – 2022

- Tutor K-12 students struggling in math and science
- Weekly one-on-one meetings with the same student to help with homework and studying

Skills

Technical: Proficiency with LaTeX, Java, Python, C, HTML, CSS, SKLearn, NumPy, SciPy, TensorFlow, Pandas, Adobe Photoshop, and Adobe Lightroom
Artistic: Photography, inking, and oil painting
Language: Dutch (Fluent), and French (Elementary Proficiency)

Awards

Dean's List | Columbia University Fall 2022 - Fall 2024
Salutatorian | BASIS Independent Brooklyn Spring 2022
Honor Roll | BASIS Independent Brooklyn Fall 2018 - Spring 2022
7th Place at State Championship | New York City Urban Debate League Spring 2021
2 gold keys, 1 silver key, and an honorable mention | Scholastic Art & Writing Awards Spring 2020
Exhibited a photograph at The Metropolitan Museum of Art along with 250 works chosen from +10,000 submissions to Scholastic Art & Writing Awards
National AP Scholar | College Board Fall 2020