

# ELISAVETA (LISA) SAMOYLOV

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## EDUCATION

**Dartmouth College**, Hanover, NH

June 2026

*Bachelor of Arts: Majors in Mathematics and Computer Science*

GPA 3.73/4.0

Relevant Coursework: Deep Learning (Coursera), Theory of Computation, Cryptography, Field and Galois Theory, Linear/Multilinear Algebra

Honors/Awards: Rufus Choate Scholar, Lovelace Scholar

Citations (Top 2% of the class) : COSC 74 (Machine Learning), COSC 76 (Artificial Intelligence)

Activities: Dartmouth Undergraduate Research Association, Association for Women in Mathematics (AWM), Women in CS, Dartmouth Math Society, Fencing, Orientation Leader

## PUBLICATIONS

### **New Quantum Codes from Generalized Toeplitz Graphs**

Andreas Garcia, Layla Jarrahy, **Elisaveta (Lisa) Samoylov**, Padmapani Seneviratne  
Under review.

### **Properties and Comparisons of Various Graphs and Their Codes**

Andreas Garcia, Layla Jarrahy, **Elisaveta (Lisa) Samoylov**

In 2024 IEEE MIT Undergraduate Research Technology Conference (URTC) [Talk]

## RESEARCH EXPERIENCE / WORK EXPERIENCE

**Minds, Machines, and Society Lab**, Hanover NH

January 2025 - Present

Undergraduate Research Assistant; Professor Soroush Vosoughi

- Assisting Professor Vosoughi redesign COSC74 and modify the curriculum
- Using PyTorch to evaluate validity of Goedel-Theorem-Prover LLM on FormalMath Benchmark dataset.
- Reproducing work results of Ganesh et al. and reviewing current literature on computation surrounding Ramsey problem (Make the JMM thing sound nicer)

**Learning, Intelligence + Signal Processing Lab**, Hanover NH

September 2024 - January 2025

Undergraduate Research Assistant; Professor Sang (Peter) Chin

- Writing and debugging python code (pytorch, numpy) for problems in machine learning on graphs, such as distance labeling and graph embedding

**Theoretical and Applied Driven Mathematics (TADM) REU**, Commerce TX

June 2024 - August 2024

Graph Based Error Correcting Codes; Professor Padmapane Seneviratne

- Translating complex issue of finding quantum error correcting codes into manageable problem on graphs
- Through working as a team and independently, found 2 new quantum error correcting codes within 8 weeks
- Compiling report concisely summarizing findings; two papers produced: one paper under review, one paper won Top 5 Paper at MIT URTC ([IEEE Xplore](#))
- Communicated findings via talks at (i) Texas A&M, (ii) Young Mathematicians Conference; (iii) MIT URTC, (iv) JMM
- Poster presentation at JMM

**Local Interstellar Medium Lab**, Hanover NH

January 2023 - June 2023

Women in Science Project (Intern); Professor Hans Mueller

- Debugged Fortran77 model (named "ZEUS") that addressed evaporation of planetary atmosphere by stellar radiation
- Organized, ran, and logged 37 trials (in Unix) with various parameters to qualitatively determine evaporation patterns
- Designed and presented a poster at the Karen E. Wetterhahn Symposium, summarizing findings from this project  
(E. Samoylov, Prof. Hans Mueller, Karen E. Wetterhahn Symposium, Dartmouth College, Hanover NH, May 24, 2023)

## TEACHING EXPERIENCE

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<b>Honors Algebra (MATH71)</b> , Dartmouth College <i>(Incoming) Teaching Assistant, Instructor: Professor Asher Auel</i>	Sept - Nov 2025
<b>Artificial Intelligence (COSC76/276)</b> , Dartmouth College <i>(Incoming) Teaching Assistant, Instructor: Professor Soroush Vosoughi</i>	Sept - Nov 2025
<b>PineCode (COSC01/10 Summer Practice)</b> , Dartmouth College <i>Grader, Instructor: Dr. Vasanta Lakshmi Kommineni</i>	July - Aug 2025
<b>Algorithms (COSC31)</b> , Dartmouth College <i>Teaching Assistant, Instructor: Professor Deeparnab Chakrabarty</i>	June - Aug 2025
<b>Machine Learning (COSC74/274)</b> , Dartmouth College <i>Teaching Assistant, Instructor: Professor Soroush Vosoughi</i>	Mar - June 2025
<b>Graph Theory (MATH38)</b> , Dartmouth College <i>Teaching Assistant, Instructor: Dr. GaYee Park</i>	Mar - June 2025
<b>Topics in Algebra (MATH31)</b> , Dartmouth College <i>Teaching Assistant, Instructor: Professor Juliette Bruce</i>	Sept - Nov 2024

## HONORS AND AWARDS

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**Travel Grant (\$1000)**, Dartmouth Women in CS (WiCS)  
**Lovelace Scholar (\$1200/Quarter x 2)**, Dartmouth College  
**Citation in COSC74 (Top 2% of the class)**, Dartmouth College  
**Travel Grant (\$500)**, Dartmouth Department of Mathematics  
**Travel Grant (\$500)**, NSF Grant DMS-2243991.  
**Citation in COSC76 (Top 2% of the class)**, Dartmouth College  
**Undergrad Research Assistantship (\$1600/Quarter)**, Dartmouth Undergraduate Research and Advising (UGAR)  
**Top 5 Paper**, MIT URTC  
**Travel Grant (\$1000)**, Dartmouth Rockefeller Center Mini-Grant  
**Endowment Fellow**, Dartmouth Endowment

## POSTERS AND TALKS

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<b>JMM AMS - PME Undergraduate Student Poster Session, I</b> Quantum error-correcting codes from generalized Toeplitz graphs	January 2025
<b>MIT URTC Oral Presentation Track #1A</b> Properties and Comparisons of Various Graphs and Their Codes	September 2024
<b>Young Mathematicians Conference</b> Additive and Qubit Codes from Generalized Toeplitz Construction	August 2024
<b>Karen E. Wetterhahn Symposium</b> Modeling Exoplanet Atmospheres	May 2023

## SKILLS AND INTERESTS

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**CS Languages / Libraries:** Python, HuggingFace API, PyTorch, TensorFlow, Scikit-Learn, Pandas, Numpy, C, Bash, Unix/Linux, Java  
**Math Languages/Software:** MatLab, LaTeX, MAGMA, SageMath, Lean  
**Software:** Jupyter Notebook / Google CoLab, Git/Github, Google Suite, MS Office Suite  
**Natural Languages:** English (native), Russian (fluent), Spanish (proficient)