




SAYAK CHAKRABARTY

 [linkedin.com/in/sayak-chakrabarty-cs](https://www.linkedin.com/in/sayak-chakrabarty-cs)  <https://www.github.com/hellokayasgithub.com/hellokayas>
 +1-802-698-3809  sayakchakrabarty2025@u.northwestern.edu
 1800 Sherman Ave suite 3-000, Evanston, IL 60201  <https://hellokayas.github.io/>

My primary areas of research are Machine Learning, Design and analysis of algorithms, Graph Theory, Algorithmic Foundations of Optimization, Statistical Modelling, Data Science, and very recently, Reinforcement Learning. I have worked previously in Monte-Carlo methods, sampling methods and additive combinatorics.

I completed my Masters of Mathematics from ISI Kolkata, India in 2020. I joined DSAIL lab at Dartmouth college as a PhD student under supervision of Prof. V.S. Subrahmanian. After spending my first year there, I transferred to Northwestern University and currently a second year PhD student in the Department of CS and working with Prof. VS Subrahmanian.

Education

-
- | | |
|--------------|---|
| 2021-Present | PhD candidate, Department of Computer Science, Northwestern University |
| 2020-2021 | PhD candidate, Department of Computer Science, Dartmouth College |
| 2018- 2020 | Masters of Mathematics, Indian Statistical Institute (Kolkata) |
| 2015- 2018 | Bachelors of Science(Hons) in Mathematics and Computer Science, Chennai Mathematical Institute |

Professional Experience

-
- | | |
|--|---|
| Present
September 2021 | Graduate Research Assistant, Northwestern University, Computer Science Department <ul style="list-style-type: none">> Designed and implemented JUST, a logic based framework to assist judges reach better decisions in court cases> Ongoing work on fake news spread on Twitter <div>Python Scikit-learn Pytorch Pandas Networkx</div> |
| September 2021
September 2020 | Graduate Research Assistant, Dartmouth College, Computer Science Department <ul style="list-style-type: none">> Designed and implemented SockAttack algorithm, a deep reinforcement learning based algorithm that will avoid detections of RFDS and operate fake accounts on e-commerce websites efficiently> Built SockDef, a defense algorithm that mitigates the efficacy of SockAttack <div>Python Scikit-learn Pytorch Pandas Networkx</div> |
| 2020
2019 | Masters of Mathematics student, Indian Statistical Institute, Math-Stat Department <ul style="list-style-type: none">> Completed my Master's Project : Markov Chains and Monte Carlo Methods and FPRAS for bipartite graphs <div>Probability Theory Graph Theory</div> |

Publications

-
- | | |
|---------------------|---|
| Under Review | A New Dynamically Changing Attack on Review Fraud Systems and a Dynamically Changing Ensemble Defense, , Venue
Authors
<div>Link</div> |
| | Preventing the spread of fake news in social media like Twitter, , Venue
Authors
<div>Link</div> |
| | Judicial Support Tool : Finding the k-Most Probable Judicial Worlds, , Venue
Authors
<div>Link</div> |

Skill

Programming Language : **Python**, C++, SQL, Haskell

Operating Systems : **Windows**, Linux

Tools and Framework : **Pandas, PyTorch, Scikit-learn, Networkx, NumPy, Matplotlib, Seaborn**, R, LATEX, Git

Statistical Skills : **Regression Analysis, Estimation Theory, Testing of Hypothesis : A/B testing**, Bayesian Inference

Relevant Courses

2022 **Graduate Algorithms**, Northwestern University

2022 **Quantum Computation**, Northwestern University

2021 **Mechanism Design**, Northwestern University

2021 **Randomized Algorithms**, Dartmouth College

2021 **Topics in Probability**, Dartmouth College

2020 **Game Theory**, Indian Statistical Institute

2022 **Stochastic Processes**, Chennai Mathematical Institute

2022 **Advanced Programming**, Chennai Mathematical Institute

2022 **Theory of Computational Complexity**, Chennai Mathematical Institute

2022 **Discrete Mathematics and Graph Theory**, Chennai Mathematical Institute

Awards

2019 **International Youth Math Challenge**, Indian Institute of Technology

2017 **Science and Engineering Research Board International Travel Award**, Department of Science and Technology, India

2014 **Mathematical Talent Reward**, Indian Statistical Institute