

# Utkarsh Prakash Srivastava

Researcher and Engineer, New York University

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## Education

<b>New York University, New York</b> MS in Computer Engineering > GPA: 3.67/4.00 > Graduate Scholarship recipient.	09/2023 – 05/2025
<b>Sikkim Manipal University, India</b> B.Tech. in Computer Science and Engineering > CGPA: 8.67/10.00 > Honors degree in Artificial Intelligence	06/2019 – 07/2023

## Experience

<b>NYU Langone Health, United States of America</b> NTV Researcher with <a href="#">Dr. Samrachana Adhikari</a>	08/2024 – Present
<b>FileRead, United States of America</b> Machine Learning Engineer Intern with <a href="#">FileRead AI</a>	06/2025 – 08/2025
<b>Nagoya University, Japan</b> <a href="#">JUACEP</a> awardee, Research Intern with <a href="#">Dr. Toshiaki Fujii</a>	06/2024 – 08/2024
<b>Sikkim Manipal University, India</b> Undergraduate Researcher with <a href="#">Dr. Palash Ghosal</a>	11/2021 – 07/2023

## Publications

- [1] **U-SwinTrans: Automated Skin Lesion Segmentation Using Swin Transformer** 📄  
Aaditya Lochan Sharma, Kalpana Sharma, [Utkarsh Prakash Srivastava](#), Palash Ghosal  
*International Conference on Intelligent Systems, Advanced Computing and Communication* [ ISACC 2025 ]
- [2] **Region of interest based medical image compression** 📄  
[Utkarsh Prakash Srivastava](#), Toshiaki Fujii  
*arXiv* [ 2025 ]
- [3] **A Transfer Learning based GUI for Skin Cancer Diagnosis and Classification using Dermoscopic Images** 📄  
[Utkarsh Prakash Srivastava](#), Krishnakant Mahesh Shedge, Tawal Kumar Koirala, Palash Ghosal  
*IEEE Silchar Subsection Conference* [ SILCON 2023 ]
- [4] **A Comparative Study of Deep Learning Algorithms in Classifying Brain Cancer** 📄  
[Utkarsh Prakash Srivastava](#)  
*International Conference on Computing Communication and Networking Technologies* [ ICCCNT 2023 ]
- [5] **Performance Analysis of an ANN-based model for Breast Cancer Classification using Wisconsin Dataset** 📄  
[Utkarsh Prakash Srivastava](#), Vidushi Vaidehi, Tawal Kumar Koirala, Palash Ghosal  
*International Conference on Intelligent Systems, Advanced Computing and Communication* [ ISACC 2023 ]
- [6] **An Automated Framework for Efficient Covid-19 Diagnosis on Computed Tomography Scans** 📄  
Palash Ghosal, Amish Kumar, Soumya Snigdha Kundu, [Utkarsh Prakash Srivastava](#), Ashis Datta, Hiren Kumar Deva  
Sarma  
*Machine Learning in Information and Communication Technology,  
Presented at International Conference on Information and Communication Technology* [ ICICT 2021 ]

## Featured Academic Projects and Collaborations

### Targetted Learning

w/ [Dr. Samrachana Adhikari](#), [Ashley Buchanan](#), and more.

09/2024 – Present

NYU Langone Health

- > Active member of the Targeted Learning Study Group, exploring advanced statistical frameworks for causal inference using semi-parametric models and machine learning.
- > Active Research on Robust Finite-Sample Extensions of Optimal Influence Functions for Model Misspecification.

### Muniscope: Automated analysis of municipal codes

w/ [Dr. Samrachana Adhikari](#), [Johnathan Jenkins](#), and more.

09/2024 – Present

NYU Langone Health

- > Fine-tuned LLM based RAG model for public health, enhancing clinical insight extraction from unstructured medical texts across 482 U.S. cities.
- > This work integrated legal research, web scraping, and secondary data analysis to build the nation's largest and most comprehensive municipal policy database.

### Playing-UNO-with-Reinforcement-Learning

w/ [Anuj Attri](#) and [Pranshu Goyal](#)

04/2025 – 05/2025

New York University

- > Developed a Deep Q-Network (DQN) agent using TensorFlow/Keras to play UNO, achieving over high win rate against random agents after training on 100,000+ games.
- > Built a fully functional multi-agent UNO environment from scratch using PyGame, modeling 108 cards, 7 action types, and 4-player turn logic, with reward shaping and illegal action masking to stabilize training.
- > Employed reinforcement learning techniques such as experience replay (buffer size: 50,000),  $\epsilon$ -greedy policy annealing, and target network updates every 100 steps to ensure sample efficiency and convergence.

### Social Decision-Making and Helping Behavior: Can Q-Learning Models Learn to Help?

w/ [Sophie Juco](#), [Iris Lu](#), [Naman Maheswari](#)

11/2024 – 12/2024

New York University

- > Engineered Q-learning and Deep Q-learning models to simulate helping behaviors in multi-agent environments, analyzing 10,000+ decision-making scenarios based on reciprocity, cost, and visibility.
- > Implemented advanced Q-learning for 1,000+ agent pairs, enhancing cooperation in multi-agent scenarios. Optimized adaptive rewards and real-time decision analysis.
- > The agent demonstrates basic helping behaviors around certain methods, but the sparseness of rewards limits the development of more complex, cooperative strategies. [🔗]

### Region of Interest Based Medical Image Compression

w/ [Dr. Toshiaki Fujii](#)

06/2024 – 08/2024

Nagoya University

- > Selected among 13 graduate students from the U.S. and Canada for the JUACEP Summer Research Fellowship at Nagoya University; funded by the Government of Japan.
- > Pioneered a [Region of Interest \(ROI\)-based compression technique](#) for medical imaging, optimizing data storage while preserving critical diagnostic details. Achieved 7× overall compression, enabling efficient transmission and real-time accessibility of MRI and CT scans for healthcare applications.

### RxVision: Reducing Medical overdose and underdose using visual tracking

w/ [Raghav Rawat](#), [Aneesh Seth](#), [Akshat Namdeo](#)

02/2024 – 02/2024

Georgia Institute of Technology

- > Developed RxVision at Hacklytics 2024 (Georgia Tech) to tackle medication risks, addressing 130+ daily overdose deaths in the U.S. by integrating AI-driven tracking for safer medication management.
- > Implemented real-time monitoring to ensure correct dosage timing, minimizing medication errors and improving patient adherence. [🔗]

### Transfer Learning Approach to optimize 3D Brain MRI Segmentation

w/ [Raghav Rawat](#)

11/2023 – 12/2023

New York University

- > Developed advanced 3D segmentation techniques for brain tumor detection using U-Net architecture and HPC concepts, achieving a 317% reduction in training time per slice.
- > Leveraged data parallelism and transfer learning to optimize computational efficiency, enabling precise and scalable medical image analysis, and enhancing segmentation accuracy by 22%. [🔗]

### SkinCheck: An AI-Powered Skin Cancer Classification Tool

w/ [Palash Ghosal](#), [Tawal Kumar Koirala](#), [Krishnakant Mahesh Shedge](#)

12/2022 – 05/2023

Sikkim Manipal University

- > Researched and developed a skin cancer classification tool using 40,000 augmented images; achieved 87.89% accuracy through deep learning experimentation.
- > Designed a user-friendly GUI for accessible detection and classification of skin cancer types across all age groups. [🔗]

## Teaching and Featured Positions

IEEE, SMIT Student Branch. *Treasurer, Webmaster, and Advisory Board Member*

08/2021 – 10/2023

- › Demonstrated effective leadership by managing the club's financial affairs and overseeing its online presence.
- › Contributed to the strategic direction and decision-making processes of the organization. Offered valuable insights and expertise in guiding the club's initiatives, ensuring alignment with its mission and goals.

**Google Developers Student Club**, SMIT. *Core Member - AI*

10/2021 – 10/2022

- › Collaborated closely with a dedicated team and actively contributed to the planning and execution of AI-related projects, workshops, and events.

**Reviewer:** ITE Transactions on Media Technology and Applications, 2024.

**Study Group:** Targetted Learning Study Group

## Featured Coursework

### › **Mathematics:**

Engineering Mathematics I,II,III (SMU); [ECE-GY 6303](#), [NYU](#): Probability and Stochastic Processes; Probability, Statistics & Stochastic Processes (5<sup>th</sup> Sem., SMU).

- ### › **Machine Learning:**
- [DS-GA 1016/PSYCH-GA 3405.004](#), [NYU](#): Computational cognitive modeling; [ECE GY 9143](#), [NYU](#): Introduction to High Performance Machine Learning (HPML); [DS-GA 3001](#), [NYU](#): Reinforcement Learning; Adv. Computer Organization and Architecture (2<sup>nd</sup> Sem., SMU); Parallel Programming (6<sup>th</sup> Sem., SMU); R Programming (7<sup>th</sup> Sem., SMU); Artificial Intelligence in Health Care (7<sup>th</sup> Sem., SMU).