Utkarsh Prakash Srivastava

Researcher and Engineer, **New York University**

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linkedin.com/in/utkarsh-ps Google Scholar

Education

New York University, *New York* 09/2023 – 05/2025
MS in Computer Engineering
- GPA: 3.76/4.00
- Graduate Scholarship recipient.

Sikkim Manipal University, *India* 06/2019 – 07/2023
B.Tech. in Computer Science and Engineering
- CGPA: 8.67/10.00
- Honors degree in Artifical Intelligence

Experience

NYU Langone Health, *United States of America* 08/2024 – Present
Machine Learning Researcher with Dr. Samrachana Adhikari

Fileread, *United States of America* 06/2025 – 08/2025
Machine Learning Engineer Intern with FileRead AI

Nagoya University, *Japan* 06/2024 – 08/2024
JUACEP awardee, Research Intern with Dr. Toshiaki Fujii

Sikkim Manipal University, *India* 11/2021 – 07/2023
Undergraduate Researcher with Dr. Palash Ghosal

Publications

[1] **Learning Sparse Label Couplings for Multilabel Chest X-Ray Diagnosis** Preprint
Utkarsh Prakash Srivastava, Kaushik Gupta, Kaushik Nath
arXiv, In submission **[2025]**

[2] **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]**

[3] **Region of interest based medical image compression**
Utkarsh Prakash Srivastava, Toshiaki Fujii
arXiv **[2025]**

[4] **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]**

[5] **A Comparative Study of Deep Learning Algorithms in Classifying Brain Cancer**
Utkarsh Prakash Srivastava
International Conference on Computing Communication and Networking Technologies **[ICCCNT 2023]**

[6] **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]**

[7] **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]**

Ongoing

[1] **Influence Function based Estimators in Causal Inference: Review of the Literature and Practicle Guideliens**
Utkarsh Prakash Srivastava, Samrachana Adhikari, Ashley Buchanan

Featured Academic Projects and Collaborations

Targetted Learning 09/2024 – Present
w/ Dr. Samrachana Adhikari, Ashley Buchanan, and more. 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 09/2024 – Present
w/ Dr. Samrachana Adhikari, Johnathan Jenkins, and more. 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 04/2025 – 05/2025
w/ Anuj Attri and Pranshu Goyal 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), ϵ-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? 11/2024 – 12/2024
w/ Sophie Juco, Iris Lu, Naman Maheswari 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. [GitHub]

Region of Interest Based Medical Image Compression 06/2024 – 08/2024
w/ Dr. Toshiaki Fujii 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 02/2024 – 02/2024
w/ Raghav Rawat, Aneesh Seth, Akshat Namdeo 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. [GitHub]

Transfer Learning Approach to optimize 3D Brain MRI Segmentation 11/2023 – 12/2023
w/ Raghav Rawat 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%. [GitHub]

SkinCheck: An AI-Powered Skin Cancer Classification Tool 12/2022 – 05/2023
w/ Palash Ghosal, Tawal Kumar Koirala, Krishnakant Mahesh Shedge 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. [GitHub]

Teaching and Featured Positions

IEEE, SMIT Student Branch. *Treasurer, Websmaster, 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; Academia Oncology Journal, 2025; IPCAI, 2026.
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^{th} 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^{nd} Sem., SMU); Parallel Programming (6^{th} Sem., SMU); R Programming (7^{th} Sem., SMU); Artificial Intelligence in Health Care (7^{th} Sem., SMU).