

SHREYA SINHA

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EDUCATION

Courant Institute of Mathematical Sciences, NYU

Master of Science in Computer Science; **GPA: 3.833/4.0**

Coursework: Computational Neuroscience, Computational Cognitive Modelling, Computer Vision, Machine Learning,

Big Data Science, ML in healthcare, Operating Systems, Fundamental Algorithms, Programming Languages

Sep. 2021 – May 2023

New York City, NY, USA

Manipal Institute of Technology

Bachelor of Technology in Computer Science

Aug. 2014 – May 2018

Manipal, KA, India

RESEARCH AND ACADEMIC EXPERIENCE

Research Associate - Glimcher Lab

PI: Dr. Paul Glimcher

- Interested in understanding the intricate interplay of computational and neural processes underlying decision-making.
- Have been working on different projects like modeling human choices using ESVT and Classical models to see how varying input stimulus distributions impact them, developing a method to derive the optimal encoding function for any given environment, modeling the curse of choices using real-world problems, etc.

Aug 2023 – Present

Neuroscience Institute, NYU Langone

Research Assistant - Glimcher Lab

PI: Dr. Paul Glimcher

- Worked on a study to find patterns in decision-making parameters and clinical outcomes during emergency department endotracheal intubation as it relates to the relationship, in time-based postgraduate years (PGY), between resident physician intubators and their faculty supervisors.
- Applied economics, psychology & neuroscience to develop interdisciplinary models of human decision-making.

Feb 2023 – Aug 2023

Neuroscience Institute, NYU Langone

Research Assistant - Razavian Lab

Master's Thesis under Dr. Narges Razavian

- Employed Contrastive & Few-Shot learning techniques to classify distinct Dementia sub-types via MRI 3D data modeling

Sep 2022 – May 2023

NYU Langone

Graduate Teaching Assistant

Causal Inference | Intro to Data Science | Reinforcement Learning | Artificial Intelligence

Aug 2022 – May 2023

NYU Center for Data Science

Summer Research Intern

Research Project under Dr. Vibhanshu Abhishek

- Developed image classification solution to study the effect of Yelp images on restaurant visits

May 2017 – Jul 2017

Carnegie Mellon University

Undergraduate Researcher

Research Project under Dr. N. G. Kini

- Developed and optimized the Needleman-Wunsch algorithm for biological sequence comparison on a parallel computing platform, emphasizing fine-grain multithreading to achieve low latency and reduced computational time using OpenCL and CUDA

Sep 2016 – Apr 2017

Manipal Institute of Technology

PRESENTATIONS AND ACHIEVEMENTS

Inefficient Divisive Normalization: Human Choosers Employ Divisive Normalization Even When They Should Not

V. Kurtz David(presenter), S. Sinha, V. Alladi, S. Bucher, A. Brandenburger, K. Louie, A. Dewan, P. W. Glimcher, A. Tymula
Nanosymposium, SFN 2023, Washington, D. C., USA

A parallel implementation of Needleman-Wunsch Algorithm

S. Sinha(presenter), K. Shivam(presenter), N. G. Kini
Indian Symposium on Computer Systems 2017, IIT Bombay, Mumbai, India

PROJECTS

Augmented DPNs for uncertainty estimation & out of distribution detection | *Python, PyTorch* **Oct 2022 – Dec 2022**

- Devised a method to augment a classifier network into a Dirichlet prior network, using a novel loss, considering it as an energy-based model & factorizing data characteristics in view of likelihood ratio test for out-of-distribution detection

Impacts of Covid-19 | *Python, Pandas, PyTorch, Scikit-learn* **Mar 2022 - May 2022**

- Analyzed the effects of coronavirus on the environment (air quality), personal lives (mental health, marriage, divorce, traffic accidents), & economic activities using data science techniques including predictive and descriptive analysis.

REMO: Robust mean absolute error styled bias mitigation objective | *Python, PyTorch* **Mar 2022 - May 2022**

- Formulated a novel modified training objective to de-bias new & pre-trained language models like GPT

Peer to Peer File Transfer | *C, Socket Programming* **Sep 2017 – Nov 2017**

- Improved the efficiency and speed of peer-to-peer file transfer by mimicking the decentralized storage process and implementing the P2P file transfer by sending concurrent requests to multiple clients.

Evaluation of Machine learning techniques in Medical Image Analysis | *Python* **Oct 2022 – Dec 2022**

- Evaluated deep learning techniques like transfer learning with CNNs, RNNs, in medical image analysis problems like classification, diagnosis, segmentation, image reconstruction & risk prediction

PROFESSIONAL EXPERIENCE

Ford Motor Company **Jun 2022 – Aug 2022**

Autonomous Vehicles Software Engineer - Intern

Michigan, USA

- Integrated new features under VHAL in the Digital Experience Platform team to improve application accessibility by 31%

Morgan Stanley **Jun 2018 – Jul 2021**

Software Developer

Mumbai, India

- Led the designing and developing efforts on productionized WPF and web reporting applications using C#, .NET, Angular
- Streamlined data pipeline leveraging distributed fault-tolerant platform services to allow for real-time data availability
- Enhanced and automated existing services and their testing, which significantly improved functionality, and increased the speed of development by 24%, resulting in a 40% increase in user engagement

Accolite **Dec 2017 – May 2018**

Software Development Engineer Intern

Hyderabad, India

- Engineered enterprise e-commerce applications on Angular and Websphere frameworks for T-Mobile
- Designed a Machine Learning solution for attendance application to incorporate chat-bot capabilities

SKILLS

Programming: Python, R, C++, JAVA, JavaScript, C, C#, CUDA, HTML, MatLab, TypeScript, Bash

Tools/Frameworks: PyTorch, Scikit-learn, Linux, Git, Angular, Android, Spark, Docker, AWS, Psychtoolbox, Qualtrics

Areas of Interests: Neuroscience, Computational Neuroscience, Neuroeconomics, Computer Vision, Deep Learning, ML, AI

LEADERSHIP / EXTRACURRICULAR

- Managed the Morgan Stanley Readers Club and volunteered at Morgan Stanley Pride and Allies
- Volunteered for the Rotary Club and other NGOs (content creation, event organization, coding mentor)
- Member of College Dance Troupe - Blitzkrieg (rep. India in the World Hip Hop Championship 2016, Las Vegas)