Abhinav Gupta

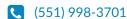(551) 998-3701   ag7948@nyu.edu   github.com/ag2307   linkedin.com/in/ag2307

Education

- **New York University**   **New York, NY**
  Masters in Computer Science (**GPA:** 3.97/4.00)   Jan 2021 - Dec 2022 (Expected)
  Relevant Coursework: Natural Language Processing and Understanding, GPU, Deep Learning, MultiCore Processors

- **Indian Institute of Technology Guwahati**   **Guwahati, India**
  Bachelors in Mathematics and Computing (**GPA:** 8.06/10.00)   July 2015 - June 2019
  Relevant Coursework: Linear Algebra, Parallel Computing, Databases, Machine Learning, Probability, Calculus, Statistics

Experience

- **New York University**   **New York, NY**
  Graduate Research Assistant | Prof. Narges Razavian - NYU Langone Health   July 2022 – Present
  - GPT style open-source benchmarking of Electronic Health Records (EHR Data)
  - Skills: Healthcare, Multimodal Deep Learning, Benchmarking Tasks and Dataset, Data Processing

- **Samsung Electronics**   **Bangalore, India**
  Senior Software Engineer | 5G Mobile Communication Systems   June 2019 – July 2021
  - Architected and automated the issue management pipeline for 5G Systems team which saved around 1 hour of daily repetitive work per team engineer.
  - Developed sensor beam management driver code for proper 5G network beam selection.
  - Optimized and ported in-house multi-core Real-Time Operating System (RTOS) for Samsung LSI 5G modems.
  - Implemented MediaTek chipset's Mobile Broadband Interface Model (MBIM) extension for Samsung.

  R&D Summer Internship | Advanced Technology Labs   May 2018 – July 2018
  - 3-D handwriting recognition with a wearable input system i.e. Samsung Gear Watch

Projects

- **Domain Adaptation of Pre-trained Language Models NLP** - Prof. Sam Bowman
  - Explored domain adaptation and few-shot learning capabilities of semi-large PLMs like GPT-2 and CTRL, to improve performance on low resource downstream tasks without having to deal with large computation power needs.

- **Semi-Supervised Learning for Object Detection Computer Vision** - Prof. Yann LeCun
  - Competed and finished in first position on object detection task leaderboard. We employed a combination of several self-supervised models and object detector heads and concluded that Barlow Twins + DeformableDETR performed the best.

- **Drug-Drug Interaction Extraction** - Relation Extraction Survey NLP
  - Analyzed and implemented several Deep Learning methods to recognize drug-drug interactions (relation extraction) that appear in clinical texts like DrugBank and MEDLINE.

- **Generative Adversarial Network:** Transferring the pose of a given person to a target pose using GANs.

- **Toy Language Interpreter:** Built a python based toy language interpreter using regex and various OOPS features which could efficiently handle nested loops, basic function calls and several other compound statements.

- **Operating System Extensions:** Built a prototype linker and scheduler to replicate general OS functionalities. Also implemented a basic linux shell from scratch in C programming language which could efficiently handle job control and pipelining.

- **Database modelling of Twitter Dataset - NoSQL:** Implemented an efficient database model in Cassandra and Neo4j to execute queries on twitter dataset using Python.

Skills and Leadership Experiences

Programming Languages	C, C++, Python, Java*, R, Bash, JavaScript*
ML/DL/CV Frameworks	PyTorch, Tensorflow, OpenCV*
Miscellaneous	MySQL, NoSQL*, CUDA*, OpenMP*, MPI*, Git, Matlab, HTML, CSS * Elementary Proficiency

- **Graduate Teaching Assistant (NYU):** Natural Language Processing, Numerical Computing, and Algorithmic Problem Solving
- **Placement Coordinator 2017-19:** Worked as a member of the Centre for Career Development, IIT Guwahati to plan and coordinate full-time Jobs and Internships of around 1000 students across 11 departments.