MOHITH DAMARAPATI

md4289@nyu.edu | 917-349-4047 | GitHub | LinkedIn

EDUCATION

Courant Institute of Mathematical Sciences, New York University — New York, NY
- Master of Science, Computer Science — *Graduating 2020*
- Grader for Undergraduate Courses - Basic Algorithms and Intro to Java

National Institute of Technology Surat — Surat, India
- Bachelor of Technology, Computer Science and Engineering: GPA: 8.98/10 — *June 2014 - May 2018*
- Secured highest grade for presenting seminar on "Alignment of Deep Learning and Computational Neuroscience"
- Capstone Project: Worked on an algorithm to detect pulmonary nodules and predict lung cancer from CT scans

WORK EXPERIENCE

Software Developer Intern, **Ugam Solutions,** Bangalore, India — *May 2017 - July 2017*
- Automated extracting foreground pixels from a huge set of images (15000) using image processing techniques and vision algorithms like GrabCut and GMM
- Reduced overall task and human capital by 50% to 70%
- Understood the importance of automation. Studied state-of-art image processing and computer vision techniques in depth to obtain the best possible accuracy

Treasurer and Machine Learning Lead, ACM-NIT Surat, India — *July 2016- May 2017*
- Lead annual budgeting process, collection and record keeping
- Chaired the Machine Learning division consisting of junior and sophomore year students
- Conducted workshops on topics like Artificial Intelligence, Deep Learning and Computer vision

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, Java
- **Web Technologies**: HTML, CSS, JavaScript, PHP
- **Frameworks**: Tensorflow, Pytorch, Scikit-Learn, Bootstrap, JQuery, AngularJS, OpenCV
- Good experience in working with Unix OS (Ubuntu), GIT
- Proficient in Algorithms and Data Structures
- Experience in understanding theoretical and practical problems in the fields like Deep Learning, Computer Vision and Natural Language Processing

PROJECTS

CNN-LSTM based framework for Automated Image Captioning *(Technologies: Python and PyTorch)*
- Designed CNN-LSTM architecture to automatically generate sensible and human understandable descriptions for images
- Trained the model from scratch on MSCOCO dataset and investigate it by tuning minimum word frequency threshold, number of LSTM layers and type of search technique used for words sampling (Greedy or Beam)
- Achieved a BLEU4 score (metric to evaluate quality of generated captions) of 20.98 which trails human baseline by 0.72

Pulmonary Nodule Detection and Lung Cancer Prediction *(Technologies: Python and Tensorflow)*
- Designed an automatic two-phase computer aided diagnosis system that can detect nodules and assuage the arduous task of radiologists, who manually identify them
- Conducted object detection techniques like Faster-RCNN to detect nodules in the first phase, followed by CNN based nodule classification to reduce false positive rate
- Achieved a true positive rate of 95% and a false positive rate of 4% which are comparable to state-of-art results

Eye Pupil Detection and Gaze Tracking *(Technologies: Python and OpenCV)*
- Eye-gaze can be used as a means to interact with the computers which can replace traditional input devices making Human-Computer Interaction faster, safer and stress-free
- Developed Viola Jones method for face detection, geometric features for eye region extraction, image gradients for pupil detection, and experimented CNNs for the same

AI Game Solvers - Wordament and Sudoku Solver *(Technologies: Python, OpenCV and Scikit-Learn)*
- Designed a python program that can solve these puzzles automatically
- Used TRIE data structure to search for words in dictionary to solve Wordament and backtracking to solve Sudoku
- Developed Object Character Recognition model trained on MNIST dataset to auto detect the puzzles

Movie Booking Website *(Technologies: HTML, CSS, JS, JQuery, Bootstrap, Angular JS, PHP, SQL)*
- Developed a movie booking website with features like signup, login, movie display sorted by category, seat map, booking history, and recommendations based on user's past data

Website for departmental fest – Hertz NIT Surat *(Technologies: HTML, CSS, JS, JQuery and Bootstrap)*
- Designed an informative website for the departmental fest with details about college Fest
- Apart from knowing details about events, students can also register for them through our website

Cryptosystem *(Technologies: C++ | Python, Socket Programming Tools)*
- Implemented a crypto chat application inspired by the Public Key Cryptography. Diffie-Hellman's method was used for key exchange, followed by Feistel network to encrypt and decrypt