

MITESH KUMAR SINGH

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EDUCATION

Master of Science (MS) in Computer Science

STONY BROOK UNIVERSITY

📅 Aug'18 - Dec'19 📍 New York, USA GPA: 3.8/4.0

- **Coursework:** Machine Learning, Natural Language Processing, Computer Vision, Data Science Fundamentals, Probability & Statistics, Operating Systems, System Security

Bachelor of Engineering (BE) in Computer Science

BIRLA INSTITUTE OF TECHNOLOGY, MESRA

📅 July'11 - May'15 📍 Ranchi, India GPA: 8.56/10.0

EXPERIENCE

SPARROWLABS.AI, Deep Learning Research Assistant

📅 Nov 2019 - Dec 2019 📍 Remote

- Worked on building a TFIDF + BERT pipeline to find top 5 (in ~10K) semantically similar question to a given question
- Performed inference benchmarking of USE and BERT over MRPC, used TFIDF + USE pipeline perf as baseline

FACEBOOK, Software Engineering Intern

📅 Jun 2019 - Aug 2019 📍 Menlo Park, USA

- Built a calendar debugging tool to fix room booking issues
- Reduced calendar team oncall tasks by 18%
- Automated the waitlist joining process for failed meeting room bookings, saving 320 mins of users time daily

GOLDMAN SACHS, Associate

📅 Jun 2015 - Jul 2018 📍 Bengaluru, India

- Full-stack development in Java and Javascript, mentored 3 new hires and conducted 10+ technical trainings
- Spearheaded the TBM platform development, used by senior leaders to analyze Goldman's yearly ROI on technology
- Developed the entitlement, state machine (50+ transitions) BPMN workflows of Project Management tool
- Instrumental in designing data models, RESTful microservices configuring elasticsearch clusters
- Built UI visualizations like heatmaps, graphs, angular tree component, and highly-performant data grids

MICROSOFT, Software Developer Intern

📅 May 2014 - Jun 2014 📍 Hyderabad, India

HACKATHONS

- Best AI Hack for MapVis at SBUHacks Sept, 2019
- Best ML Hack for Eddie at MLH Hack@CEWIT Feb, 2019
- Best Nutrition Hack at HackHealth@SBU Apr, 2019

TECHNICAL SKILLS

- **Strongest Areas:** NLP, Deep Learning, Data Structures, Algorithms, Software Design
- **Languages (experienced in):** C, Java, JavaScript, SQL
- **Languages (familiar with):** Python, Hack, C++
- **Libraries:** GraphQL, Relay, React, Elasticsearch, Junit
- **ML Libraries:** PyTorch, TensorFlow, ParlAI, OpenCV, Keras, scikit-learn, NLTK, CoreNLP, Nvidia CUDA

PROJECTS

Eddie: A Knowledge Backed Dialog Agent

NLP Research at COMPAS Lab Jan'19 - Dec'19

- Built an open-domain, contextual, conversational QA agent using modified DrQA, BERT and PGNet architectures
- It has a document retriever, neural reader, clarifying system and an answer ranking module
- Trained an attentive stacked biLSTM model having 45% F1 accuracy on QuAC dataset
- Used attentive history embeddings for context
- Improved the retriever accuracy (% match in top 5 doc) from 11% to 64% by adding previous QA pairs and topic as context in queries to retriever

Adversarial Question Generation

NLP, Pytorch, Python Sep'19 - Oct'19

- Built a framework that generates questions, using transformer based uniLM model, on which a given QA system fails
- Trained a 2 layer neural network classifier on failed questions (using infersent embeddings) of a given QA system (BiDAF, BERT based) to classify above generated questions as unanswerable/answerable, with 65% accuracy

Single Shot Object Detection

Computer Vision, Tensorflow, Python Feb'19 - Apr'19

- Designed and implemented a Hybrid Neural Object Detection Model from 2 famous single shot object detectors, YOLO and SSD, using transfer learning to detect and classify images

BKPFS: A Backup File System

C, File Systems, Kernel Programming Feb'19 - Apr'19

- Developed a stackable file system to list, view, recover or delete backups to a file over Linux kernel
- Wrote 2000 lines of kernel code to implement system calls, ioctl commands, visibility and retention policies

Activity Recognition in Big Bang Theory Scene

Machine Learning, Pytorch, Python Sep'18 - Dec'18

- Developed hand, upper-body, scene and activity detection classifiers on Big Bang Theory Video Dataset
- Trained Hard Negative Mining SVM, VGG-16 CNN and LSTM architectures