

# SHREYA GUPTA

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## EDUCATION

### Bachelors of Technology in Software Engineering

2016-20 (*Expected*)

Delhi Technological University, New Delhi, India; CPI: 9.2/10 (Department Rank 3 out of 98 students)

FEATURED COURSEWORK: Machine Learning, Natural Language Processing, Data Mining, Discrete Mathematics, Multivariate Calculus, Modeling & Simulation, Compiler Design

## RESEARCH EXPERIENCE

Defence Research and Development Organisation (DRDO), New Delhi

Sep'19-Present

Research Intern, Automatic QA Generation from Advertisement, Advisors: Dr. S.P. Mishra, Dr. Anil Goswami

- Designing a Question-Answer (QA) system that can answer user queries on job postings by DRDO. Baseline: DrQA

Software Engineering Lab, Delhi Technological University, India

Sep'18-Present

Bachelor Thesis on Deep Learning in SQPM, Supervisor: Dr. Ruchika Malhotra

- Empirical study critically and visually analyses the application of deep learning architectures in evaluating Software Quality Prediction Metrics (SQPM) like defect prediction, effort estimation, and fault localisation.
- Identified shortcomings of the existing work and enlisted future guidelines for its use and application.

UCLA Institute of Pure and Applied Mathematics (IPAM) and Google, LA

Jun-Aug'19

Research Intern & RIPS-NSF Scholar, Mentors: Dr. Bao Wang, Vardan Akopian & Scott Schneider

- Designed end-user privacy protection framework while making Google's Ads Data Hub useful to advertisers.
- Framework used bayesian probability to assess the likelihood of uniquely identifying a record in a dynamic dataset.
- Quantified user data leak by novel recomputation of SUDA scores, commonly utilized in Statistical Disclosure Control.

Neuroscience Lab, Indian Institute of Technology, Delhi

Independent Research Intern, Supervisor: Dr. Tapan Gandhi

- Inferring the process of object recognition from brain signal  
– Proposed a novel method for face recognition from MEG signals of human brain.  
– Reduced the effective time stamps from 100-360 ms to 120-240 ms, enhancing computational efficiency by 54%.  
– Found neurons in the brain responsible for visual identification using support-vector machines with gaussian kernel.

## PUBLICATIONS

**Gupta S.**, Malhotra R.

“Empirical Study of Deep Learning in Software Quality Predictive Modelling”

*Under Review in Artificial Intelligence Review*

Aggarwal S.<sup>\*</sup>, Fuentes M.<sup>\*</sup> **Gupta S.**<sup>\*</sup>, Prins A.<sup>\*</sup>, Wang B., Akopian V., Schneider S.

“Risk Assessment and Measurement of Privacy Leaks” *Poster Presentation at CUR REU symposium*

*AMS Contributed Paper Session at Joint Mathematical Meet'20 (Accepted Poster and Presentation)*

**Gupta S.**, Gandhi T.,

“Identification of Neural Correlates of Face Recognition using Machine Learning Approach”<sup>1</sup>, 2019,

*Advances Intelligent Systems and Computing (AISC)*, vol. 992, pp 13-20, Springer Singapore (Scopus Indexed)

<sup>\*</sup> indicates equal contribution

## ACADEMIC ACHIEVEMENTS & AWARDS

- Google Women TechMaker Scholar'19, awarded to students working for diversity & inclusion in Computer Science (acceptance rate: 2%)
- RIPS-NSF Scholar'19, one of the 36 selected interns from 1000+ applications worldwide (acceptance rate: 3%)
- Infosys Makeathon'19, Runners-Up (amongst 20 teams)
- Department Rank 1 (in 98 students), University Rank 3 (in 1800 students) in fourth semester (GPA: 9.83/10).
- 99.73 Percentile in Engineering Entrance Examination, ranked 4400 among 1.4 million students (2016)
- NTSE Scholarship for being in top 500 among all schools in India (2012).
- Athlete of the year - DAV Public School, for winning accolades in Volleyball, Basketball and Athletics (2016).
- National Level Volleyball Player led the team that ranked 4th at DAV National Games, 2014.

<sup>1</sup> Doi:[10.1007/978-981-13-8798-2\\_2](https://doi.org/10.1007/978-981-13-8798-2_2)

## PROJECTS

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- Bilingual Word Sense Disambiguation Mar'19-Present
- Performing bilingual WSD on low resource languages, Hindi and Marathi. Using parallel WSD.
- Real-Time Epidemic Spread Mapping (Smart India Hackathon'19)<sup>2</sup> Feb-Mar'19
- Created a biomedical web and android application for Thermo Fischer.
  - Maps crowdsourced time-series data, visualises in real time; predicts the spread of current/recurring epidemic.
  - Predicts the forthcoming epidemic using FastAI and PyTorch; alerts the dispensaries if medication falls shorter than the upcoming demand using Flask API; alerts the people of a spread and hospitals nearby.
- Tracking Complaint Status (BrainWaves'19) Jan-Feb'19
- Worked with 44,000 complaints (reason, summary, company response, transaction type etc.) to classify the complaint status into one of four categories for SocGen, French multinational banking company.
  - Used BERT-as-service to encode sentence embeddings of complaints and company response into 768 feature vector.
  - Deployed two layered BILSTM to automate tracking.
- Voice Assistant for LinkedIn (Wintathon'19)<sup>2</sup> Jan'19
- Designed a voice assistant for LinkedIn; enables users to search for people & job openings, navigate and maintain (add/delete/view/edit) profile sections using voice command. Integrating with Amazon Alexa.
  - Used part-of-speech tagging, NER, constituency tree parsing, skip gram model, conceptNet and coreNLP.
- Sentiment Analysis for Movie Review Classification (Self undertaken)<sup>2</sup> Dec'18
- Used Word2Vec to classify IMDb's movie reviews as positive or negative with an accuracy of 83%.
  - Used bag-of-words, word vectors, POS tagging and clustering; analysed model performances.
- ATM Surveillance in Banks (Infosys Digital Makeathon'19)<sup>2</sup> Oct'18
- Automated ATM Surveillance System to reduce manual monitoring and prevent thefts and skimming inside ATM.
  - Designed face recognition, using FaceNet and optimised object classification, using CNN, to identify and report abnormal activities in banks in real-time.

## TECHNICAL STRENGTHS

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<b>Programming</b> C++, C, Python, R	<b>Frameworks</b> MATLAB, PyTorch, Tensorflow, Keras,
<b>Familiar-with</b> HTML, CSS, PHP, Java	OpenCV, Sci-Kit, SQLite, Oracle, Flask

## POSITIONS OF RESPONSIBILITY

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- Founder & Director, ML Nerdie, Delhi.<sup>3</sup> Organising peer-reviewed sessions and modules (Nov'19 - Present)
- Core Team Member, Delhi Women in Machine Learning and Data Science (WiMLDS)<sup>4</sup> (Aug'18 - Present)
- Core Team Member & Evangelist, Women Who Code Delhi <sup>4,5</sup> (Aug'18 - Present)
- Vice-Captain, Girls Volleyball Team, DTU. Built a team of 12+ girls for the first time in DTU (Aug'17 – Present)
- Creative Head, Aahvaan, DTU, largest Sports Fest of North India. Monitored budget of Rs. 20,000; led a team of 40+ students. (Aug'17 - May'18)
- Actor & Writer, Pratibimb, Theatre Society of DTU. Scripted and enacted in plays on National Integration and Drugs in India. (Aug'16- Dec'17)

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<sup>2</sup> <https://github.com/ShreyaGupta08>    <sup>3</sup> <https://www.mlnerdie.com>    <sup>4</sup> <https://github.com/ShreyaGupta08/Talks>  
<sup>5</sup> <https://www.womenwhocode.com/delhi/about>