SHREYA GUPTA

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EDUCATION

Qualification	Passing Year	School/University & Board	Score	Rank
B.Tech-Software Engg.	2016-2020 (expected)	Delhi Technological Univ.	9.12/10.00 CGPA	Department Rank-3 (out of 98 students)
XII (Sr. Sec.)	2016	DAV Public School, CBSE	95.6%	Batch Rank-6 (out of 410 students)

Featured Coursework: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Discrete Mathematics, Linear Algebra, Modeling and Simulation, Object Oriented Software Engineering, Software Testing, Compiler Design

RESEARCH EXPERIENCE

○ **Neuroscience Lab, Indian Institute of Technology, Delhi**   **[May - Oct'18]**
   Neuroscience-Inferring the process of object recognition from brain signal using MATLAB, Dr. Tapan Gandhi

   - 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, decreasing computational complexity by 54%.
   - Found neurons in the brain responsible for visual identification using **Support Vector Machines** with Gaussian Kernel.
   - '***Identification of Neural Correlates of Face Recognition using Machine Learning Approach***' presented at *ISCMM-2019*.

○ **Institute of Pure and Applied Mathematics, UCLA and Google, LA**   **[June - Aug'19]**
   Developing context-aware privacy algorithms to share information while protecting end-user privacy

   - Incoming research intern at IPAM, UCLA to ensure end-user privacy while making online search datasets useful to advertisers.
   - Identifying patterns in the ways user information is queried
   - Developing methods to evaluate safety in user privacy during transactions.

○ **Indian Institute of Technology, Delhi**   **[Jan'19 - Present]**
   Early stage Cervical Cancer detection in females, Dr. Tapan Gandhi

   - Working on identifying early stage **cervical cancer detection in females**.
   - Developing a **camera integrated iOS application** to find probability of cervical cancer from **user clicked images**.

○ **AI Lab, Delhi Technological University, Delhi**   **[May'19- Present]**
   Speech diarization, Dr. Rajni Jindal

   - Identifying who speaks when using **speech models**, language probabilistic models and Recurrent Neural Network (**RNNs**).
   - Competing with state-of-the-art Google's UIS-RNN as a part of Bachelor thesis.

○ **TavLab, Indraprastha Institute of Information Technology, New Delhi**   **[May'19- Present]**
   Antimicrobial resistance for novel bacteria, Dr. Tavpritesh Sethi

   - Detecting bacteria pathogenicity using **LSTM** and **Attention models**; finding pathogenic subsequence in novel bacteria.
   - **Exceeding State-of-the-art's accuracy by 5%**, further development in progress.

○ **Software Engineering, Delhi Technological University, Delhi**   **[May'18-April'19]**
   Deep Learning in Software Quality Predictive Modeling, Dr. Ruchika Malhotra

   - Empirical study critically and visually analyses the **use and application of deep learning architectures** in determining Software Quality Prediction Metrics (**SQPM**) like defect prediction, effort estimation, fault localisation etc.
   - Identified shortcomings of the existing work and enlisted future guidelines for DL in SQPM.
   - ***'Empirical Study of Deep Learning in Software Quality Predictive Modelling'*** under Peer-Review.

ACADEMIC PROJECTS

○ **Eliminating Gender Bias from Word Embeddings** (*Self undertaken*)   **[March'19 - Present]**
   - Identifying gender bias in literature and rectifying discourse ambiguity, using Deep Learning models, related to gender while creating creating word embeddings using GloVe.

○ **Real-Time Epidemic Spread Mapping**   **[Feb - March'19]**
   - Created a biomedical **web and android application** for **Thermo Fischer** as finalists of Smart India Hackathon 2019.
   - Maps **crowdsource** and **historical 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**.

○ **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 Google's **BERT-as-a-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*)   **[January'19]**
- Designed a voice assistant for LinkedIn which would enable handicapped users to **search** for people and job openings, **navigate** and **maintain** (add/delete/view/edit) profile sections using voice command only. Integrating with Amazon Alexa.
- Model uses Part-of-Speech (**POS**) tagging, **NER** and constituency **tree parsing**, **skip gram model, conceptNet and coreNLP**.

○ **Sentiment Analysis for Movie Review Classification** (*Self undertaken*)   **[December'18]**
- Used Google's **Word2Vec** to classify **movie reviews** obtained from IMDb as **positive or negative** with an **accuracy of 83%**.
- Created models using **bag-of-words, word vectors, POS tagging**, and clustering; analysed model performances.

○ **Happiness Index Analysis to Facilitate Policy Making**   **[Sept-Oct'18]**
- Used World Gallop Poll to **rank countries** based on their Happiness Index. Conducted a local poll of 250+ responses and **ranked Delhi** in the world rankings using a **Multivariate Linear Regression** model with an accuracy of **91.28%**.
- Found socio-economic attributes that influence the happiness of people to assist Delhi Government in policy making.

○ **ATM Surveillance in Banks**   (*Infosys Digital Makeathon'19*)   **[Oct'18]**
- Constructed a working prototype which used AI, ML and Deep Learning architectures to perform ATM Surveillance in Banks.
- Designed **face recognition, using FaceNet**, optimised **object classification, using CNN**, to identify and report abnormal activities in banks in real-time, reducing manual monitoring and preventing thefts and skimming.

ACADEMIC ACHIEVEMENTS AND AWARDS

- **RIPS Scholar, IPAM, UCLA**, one of the 36 selected interns from 1000+ applications.
- **Department Rank 1** with a CGPA of 9.83/10.00 in fourth semester. **Department Rank 3** in Software Engineering overall.
- **99.69 Percentile** in JEE Mains based on class 12th board results and JEE Mains score.
- **NTSE Scholarship** for being in top 500 among all schools in India (2012).

COMMUNITY WORK

- **Founder and President,** Habiliter Learning Group, College's first all-women machine learning Student Interest Group (Jan'19)
  - o Conducted an online session with Mr. Karan Sanwal, Software Engineer, Google, Mountain View, answering FAQs on career in industrial research and pursuing a Masters in Science from an esteemed university abroad.
  - o Holding peer-reviewed sessions and modules, weekly paper reading sessions, collaborating on projects.

- **Core Team Member and Evangelist,** Women Who Code Delhi (Aug'18)
  - o Lead 'Practically ML[1]', a machine learning workshop series of 5 sessions, teaching ML from practical perspective. Taught 300+ students, undergraduates, researchers and industry professionals, collectively. Held competitions.
  - o Collaborated with ZS Associates and gave a long abstract on Big Data to an audience of 70+ attendees.
  - o Featured in WWCode Global's bi-weekly newsletter Code Review and WWCode Delhi's Applaud Her section.

- **Core Team Member,** Delhi Women in Machine Learning and Data Science (WiMLDS) (Aug'18)
  - o Organised MLCC powered by Google. Mentored a group of 7 students in building their first ML project from scratch.[2]
  - o Organised 'Everything ML' and delivered a talk on 'NeuroML[3]', interdisciplinary work between neuroscience and machine learning.

TECHNICAL SKILLS

● Programming: C++, C, Python, R ● Familiar-with: HTML, CSS, PHP, Java	● Frameworks: MATLAB, PyTorch, Tensorflow, Keras, OpenCV, Matplotlib, Pandas, Sci-Kit, SQLite, Oracle, Eclipse, Flask

COURSES

● Linear Algebra and Calculus	● Multivariate Calculus	● Machine Learning by Andrew Ng	● Deep Learning specialisation
● 22-course track Data Scientist in Python by DataCamp	● Statistical NLP by Christopher Manning	● MLCC by Google Facilitator Sakshi Shukla	● PyTorch Nanodegree Program by Udacity

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[1] https://github.com/WomenWhoCodeDelhi/PracticallyML

[2] https://github.com/ShreyaGupta08/Breast-Cancer-Detection-using-Machine-Learning

[3] https://github.com/ShreyaGupta08/WiMLDS-Talk-NeuroML

POSITIONS OF RESPONSIBILITY

- **Captain**, Girls Volleyball Team, DTU. Helped build a team of 12+ girls for the first time in DTU (2017 – Present)
- **Creative Head**: Aahvaan, DTU, the largest Sports Fest of North India. Monitored a budget of Rs. 20,000; led a team of 40+ students.
- **Actor, Writer and Core-Team member**: Pratibimb, Theatre Society of DTU (Aug 2016- Dec 2017)

EXTRA-CURRICULAR ACTIVITIES AND ACHIEVEMENTS

- **Top 20 Teams,** in Wintathon by LinkedIn. Amongst the 60 women selected from all across India. (Jan'19)
- **Winner**, PyTorch Scholarship Challenge Nanodegree Program, Phase 1, Nov'18
- **First Runners Up** - Infosys Digital Makeathon'18 for designing a cost effective solution to provide ATM Surveillance in Banks.
- **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.
- Organised an **independent art exhibition** to display self-composed 40+ professional paintings and sketches (2014).