GAURAV SINGH

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EDUCATION

University of Texas at Arlington, United States of America — 2023-2028
Doctor of Philosophy in Computer Science (pursuing) — *3.625 / 4 cgpa*

University of Leeds, United Kingdom — 2019-2020
Master of Science in Advanced Computer Science (Artificial Intelligence) — *7.66 / 10 gpa*

Centre for Development of Advanced Computing, Noida, India — 2018-2019
PG Diploma in Big Data Analytics — *72.13%*

Delhi School of Economics, Delhi University, Delhi, India — 2016-2018
Master of Business Administration in International Business — *66.89%*

Delhi Technological University, Delhi, India — 2011-2015
Bachelor of Technology in Software Engineering — *7.2 / 10 cgpa*

National Victor Public School, Delhi, India — 2010-2011
Senior Secondary Examination, CBSE — *86.4%*

National Victor Public School, Delhi, India — 2008-2009
Higher Secondary Examination, CBSE — *90.2%*

PUBLICATIONS

- **Singh, G.**, Amatare, S. & Roy, D. (2025). SauRON: Smart Surveillance using Robotic Swarms with Optimized Networks. *IEEE International Conference on Computer Communications (INFOCOM), (NetRobiCS).* **[Best Paper Award]**
- A. Kharel, R. Shakya, E. Barrientos, **G. Singh**, X. Zhang and D. Roy, "POSTER: Analysis of Latency for Wireless Connectivity in Networked Robots," 2025 IEEE 26th International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM), Fort Worth, TX, USA, 2025, pp. 154-156, doi: 10.1109/WoWMoM65615.2025.00036.
- Hazari, R., **Singh, G.,** Renjith, D., Krishnan, D., Pavanitha, B., Olufowobi H., and Roy, D., "Spec-SCAN: Spectrum Learning in Shared Channel using Neural Networks," In CCNC 2025 WKSHPS: 5th International Workshop on Communication and Networking for Swarms Robotics (ROBOCOM).
- Amatare, S., **Singh, G.**, Shakya, R., Kharel, A., Alkhateeb, A., & Roy, D. (2024). DT-RaDaR: Digital Twin Assisted Robot Navigation using Differential Ray-Tracing. *IEEE Transactions on Intelligent Transportation Systems (TITS)* (*In Review*)
- Amatare, S., **Singh**, **G.,** Aavash, K., & Roy, D. (2024). Real-Time Localization of Objects using Radio Frequency Propagation in Digital Twin. *IEEE Military Communications Conference (MILCOM)*.
- Amatare, S., **Singh, G.,** Samson, M., & Roy, D. (2024). RagNAR: Raytracing Based Navigation for Autonomous Robots in Unstructured Environment. *IEEE Global Communications Conference (GLOBECOM)*.
- **Singh**, **G.,** Amatare, S., Raul, S., Aavash, K., & Roy, D. (2024). 6G Communication for Networked Robotics. *IEEE Network Magazine* [Submitted].
- Rahman, M.H., **Singh, G.** and Roy, D. (2024). Speclearn: Spectrum Learning in Shared Band under Extreme Noise Conditions. *IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*.
- **Singh**, **G.** (2021). Sentiment Analysis of Code-Mixed Social Media Text (Hinglish). *https://arxiv.org/abs/2102.12149*
- **Singh**, **G.** (2020). Decision Tree J48 at SemEval-2020 Task 9: Sentiment Analysis for Code-Mixed Social Media Text (Hinglish). *http://arxiv.org/abs/2008.11398*

AWARDS AND RECOGNITION

- **NSF Travel Grant to Participate in Colosseum Young Gladiators 2024** **(2024)**
- **Graduate Dean's Summer Research Assistantship & Dissertation Fellowship** **(2024)**
- **Jeff and Lisa Smith Outstanding Graduate Researcher Award** **(2025)**

GRADUATE TEACHING ASSISTANTSHIP

Department of Computer Science & Engineering, The University of Texas at Arlington, USA. (Aug 2023 – Present)

- **CSE 5344 - Computer Networks** **(Fall 2025)**
- **CSE 3302 – Programming Languages** **(Summer 2025)**
- **CSE 5344 - Computer Networks** **(Spring 2025)**
- **CSE 1320 – Introduction to Computers & Programming** **(Fall 2024)**
- **CSE 5334 – Data Mining** **(Spring 2024)**
- **DASC 5301 –Data Science** **(Fall 2023)**

GRADUATE RESEARCH ASSISTANTSHIP

Department of Computer Science & Engineering, The University of Texas at Arlington, USA.

- ***Transformative Wireless Systems & Technology (TWiST) Lab*** ***(May 2023 – Present)***

INTERNSHIPS

Metals and Minerals Trading Corporation (MMTC) Limited, Delhi *Student Intern (MBA)*

- Learned about international market of agricultural products and how their import done for the Indian market. Studied the procedures of flow of import and various terminologies and definitions used in the process. Also learned about the documentation that needs to be completed at each step of import. **(Jun 2017 – Jul 2017)**

National Informatics Centre (NIC), Govt. of India, Delhi *Student Intern (B.Tech)*

- Enhanced my knowledge on Java and gained basic skills for creating applications in Android OS such as creating an interactive page for UI and connecting it to other pages and database. Built a basic application in android for receiving customer feedback and complaints. **(Jun 2014 – Jul 2014)**

Computer Management Corporation (CMC) Limited, Delhi *Student Intern (B.Tech)*

- Gained an understanding on versatility of Java for coding. Grasped the basic concepts of java such as classes, objects, exception handling, multithreading, Java UI, database handling and socket programming. Built some basic applications and Java applets using Java UI features and connected them to database. **(Dec 2013)**

ACADEMIC PROJECTS

- **Sentiment Analysis of Code-Mixed social media text written in Hinglish** *(MSc)*

Description: Performed 'Sentiment Analysis of Code-Mixed Social media text (Hinglish)' listed as a task in SemEval-2020 competition, taken up as the MSc Project. Created an initial solution using the Weka which achieved an F1-score of 0.532. It ranked as 59 on the competition's website. After exploring more techniques such as Count Vectorizer, One Hot Binarizer, Tf-Idf Vectorizer, Word2Vec, Doc2Vec and FastText embeddings for creating the vectors of the tweets and experimenting them on various machine learning and deep learning algorithms, final best classifier was created using an ensemble of classifiers. It obtained an F1-score of 0.6852 and would have ranked 16 among the submissions made on the competition's website. In developing this solution, data was cleaned in 5 iterations, a custom stopword list was created and also a Hindi spell-checking dictionary for normalizing the Hindi words was developed. [code] **(Jun 2020 – Sep 2020)**

- **Robotics and Computer Vision** *(MSc)*

Description: Led a team of 4 to build a program for a robot to be run on simulator where the robot could enter into a room after recognizing it based on the color surrounding it and could find a poster inside that room and recognize the character present in it. This project was done using OpenCV library and various algorithms used were HoughCircles, findContours, approxPolyDP, template matching, canny edge detection, feature matching using ORB algorithm. [code] **(Nov 2019)**

- **Comparative Analysis of Customer Satisfaction of Honda and Maruti Suzuki Cars** *(MBA)*

Description: Built a questionnaire for receiving the feedback from the Maruti and Honda car owners on their satisfaction about their cars. Performed a comparative analysis of the two companies using graphical analysis and t-test using SPSS (Statistical Package for the Social Sciences) tools. **(Apr 2018 – May 2018)**

- **Social Box** *(B.Tech)*

Description: Built an application in a team of 4 for providing the facilities of sharing media online which could be audio, video or text along with chatting facilities among the various clients using the storage facilities and online streaming on the internet. This project was built using the Adobe Dreamweaver and WAMP Server. **(Mar 2015 – May 2015)**

- **Chat server and Port scanner** *(B.Tech)*

Description: Created a Java application in a team of three that can provide a common platform for communication among various users(nodes) using a connection between a server and various clients. It could also check for open ports in the client's computer in a loop for establishing a connection. **(Mar 2014 – Apr 2014)**

ONLINE CERTIFICATIONS

- **Coursera Certificates**

Deep Learning Specialization - *https://coursera.org/share/daf0d5c8fdd1937cad263e8ba32c2c38* **(Mar 2021)**
DeepLearning.AI Tensorflow Developer - *https://coursera.org/share/b7be5905828aa7eee44f5c8c9570ac05* **(Apr 2021)**
Natural Language Processing Specialization - *https://coursera.org/share/5e8e7500d44ae162d0897d6ddf1ddaed* **(Apr 2022)**

- **HackerRank Certificates**

SQL (Intermediate) Certificate - *https://www.hackerrank.com/certificates/8cc61d92d156* **(Sep 2020)**

EXTRACURRICULAR ACTIVITIES

- Conducted a gaming event as part of a team during DTU's technical fest Aeon **(Feb 2014)**
- Played as an attacker for the software-branch football team in DTU, clinched the silver medal **(Mar 2014)**