

# Gaurav Sinha

Samsung Research & Development

Email: gauravsinha952@gmail.com

Senior Software Engineer

Github: <https://github.com/gauravsinha7>

July, 2018-Present

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## Interests

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Deep Learning, Reinforcement Learning, Natural Language Processing, Knowledge Representation & Learning, Mathematics, Recommender Systems, Machine Learning for Big Data

## Patents and Publications

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[1] [Method and System of Network Handover on Transport Layer](#)

Madhan Raj, Karthikeyan A, S Jayaseelan, Gunjan K Chaudhary, **Gaurav Sinha**, S Sabareesh  
Patent Application No. : 201941033010 | Grade: A1

[2] [QSOCKS: Design and Method of Socks over QUIC](#)

Madhan Raj, S Jayaseelan, Gunjan K Chaudhary, **Gaurav Sinha**, Karthikeyan A  
Patent Application No. : 201941008695 | Grade: A1

[3] [Cross-Layer QUIC \(CQUIC\) for Next Generation Mobile Networks](#)

**Gaurav Sinha**, Madhan Raj, S Jayaseelan, Gunjan K Chaudhary  
IEEE Wireless Communication and Networking Conference 2020

[4] [Novel Multi pipe QUIC Protocol to Enhance the Wireless Network Performance](#)

Gunjan K Chaudhary, Harikrishnan N, Karthikeyan A, Madhan Raj, S Jayaseelan, **Gaurav Sinha**, Debabrata Das  
IEEE Wireless Communication and Networking Conference 2020

## Research Experiences

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### Search Optimization for University's Central Library

Spring 2017 - Winter 2017

Guide: Prof. [Shalini Batra](#), Thapar Institute of Engineering & Technology

- Used data-driven approaches for finding dense correspondences between textual data of nearly 100 million books.
- Use of NLP pipeline and ISBN indexing to issue tags by finding correlation using descriptor similarity between books and then developing Markov Chain using neural networks for stochastic predictions.
- The solution outperformed legacy search in the library, consequently, a correlation of 0.84 was achieved with *word2vec*.

### Morphological Segmentation using stack LSTM

Summer 2017

Guide: Prof. [A.K. Singh](#), IIT B.H.U.

- Worked over *Morpho Challenge 2010* dataset by implementing state-of-the-art Morfessor Baseline method.
- Devised an algorithm to capture underlying grammatical construction to extract morphemes.
- Optimized the algorithm using likelihood predictions, thereby achieving an F-score of 44% for the English language.

### Genetically Modified Tetris

Fall 2017

Guide: Prof. [P.S. Rana](#), Thapar Institute of Engineering & Technology

- Implemented the Genetic Algorithm into Tetris taking into account all possible block combinations.
- Used variation, inheritance, limited space, competition for natural selection along with two-point crossover.
- Experiments outperformed the fuzzy logic-based Tetris and achieving a maximum of 4 million line clearances.

## Experience

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**Samsung Research and Development**  
Senior Software Engineer

July 2018-Present  
Bangalore, India

- Working over Transport and Network Layer to develop Kernels and Android solutions for new improved Data Protocol Solution in Samsung's Flagship Android Smartphones.
- Building Intelligent Machine learning solutions for wireless networks for smart packet routing and vertical handovers.

## Samsung Research and Development

January 2018 - June 2018

Software Development Intern

Bangalore, India

- Worked over Big Data technologies for the Video and Web Quality services (VWQS) calculating the KPIs for the data gathered by operators using Apache spark.
- Optimized the query processing time of the existing data analysis system using Apache Kylin by almost ~63%.

## WNS Global Services Pvt. Ltd.

June 2017 - July 2017

Software Development Intern

Gurgaon, India

- Worked in Analytics Team as a full stack developer, to calculate set KPIs using SQL procedures.
- Analyzed the North American Airlines data and calculated KPIs over Tableau.

## Aspiring Minds Assessment Pvt. Ltd.

June 2017 - July 2017

Test Developer

Gurgaon, India

- Worked part-time in Research Team in Code Rating Project and graded 960 codes.
- Prepared dataset used in [Automata Code Evaluation](#) to grade coding problem.

## Education

### Thapar Institute Of Engineering and Technology

2014-2018

Bachelor of Engineering in Computer Engineering

GPA:8.97

Punjab, India

## Awards & Honors

- Received the coveted Samsung Citizen award among ~2500 working professionals [Q3,2019]
- Selected 1 among 15 for Summer Research Fellowship at IIT B.H.U [2017]
- Winner weekly coding challenge at the Institute level for the month-long coding challenge [2016]
- Recipient of Merit Scholarship for consecutive years [2014, 2015]
- Honorable mention and event icon for Ideathon for being national coordinator [2015]

## Co-curriculars

- Convenor & Head of Creative Computing Society: Largest technical Computer society [2016-2017]
- National Coordinator Ideathon: Led a team of 40 to organize a startup incubation contest [2015]
- Convenor Saturnalia: Managing a team of ~100 for the technical and cultural festival of Thapar Institute of Engineering & Technology [2015]

## Certifications

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| • <a href="#">Sequence Models by deeplearning.ai</a>                         | Organization: Coursera | January 2020  |
| • <a href="#">Improving Deep Neural Networks by deeplearning.ai</a>          | Organization: Coursera | December 2019 |
| • <a href="#">Neural Networks and Deep Learning by deeplearning.ai</a>       | Organization: Coursera | November 2019 |
| • <a href="#">Data Science Specialization by John Hopkins University</a>     | Organization: Coursera | July 2019     |
| • <a href="#">Machine Learning with Python &amp; Python for Data Science</a> | Organization: IBM      | June 2018     |

## Technical Skills

### Programming Language

Fluent in C/C++, Python; Familiar with Java, UNIX Scripting

### Libraries

NumPy, TensorFlow, Scikit-Learn, Pandas, Keras, Matplotlib

### Software Skills

R, git, MATLAB, L<sup>A</sup>TEX, CMake, Apache Kylin, Hive, Android Studio, docker

### Big Data

Familiarity with Apache Hadoop, Map Reduce, Hive, Kylin, HBase