

Shivang Chopra

CONTACT INFORMATION

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EDUCATION

Delhi Technological University (DTU), New Delhi, India

Bachelor of Technology in Computer Engineering

August 2016 – June 2020 (expected)

Overall GPA: 8.61/10

Coursework: Information & Network Security, Distributed Systems, Artificial Intelligence, Natural Language Processing, Compiler Design, Object oriented Programming Systems, Data Structures, Algorithm Design & Analysis, Operating Systems, Database Management Systems, Theory of Computation

Lancer's Convent, Delhi, India

All India Senior School Certificate Examination (AISSCE)

April 2014 – April 2016

Percentage: 96.4% | Batch Rank 2 (Scholarship recipient) | President computer society- As the president of the computer society in my school, I organised various workshops and competitions promoting the coding culture in my school.

RESEARCH EXPERIENCE

IBM Research, New Delhi, India

Nishtha Madaan, Sameep Mehta

June 2020 - Present

Storyline preserving explicit content detection and isolation from videos. Detection of offensive, abusive, pornographic content on videos and eliminating them without affecting the original video.

MIDAS@IIIT-Delhi, New Delhi, India

Dr. Rajiv Ratn Shah, Ramit Sawhney

June 2020 - Present

Suicidal Ideation Detection: Incorporating historical user profiling and temporal graph convolutional modeling for automated detection of suicidal connotations on Twitter. Furthermore, we explore historical activities of users and homophily networks formed between Twitter users for extracting suicidality trends.

Cornelia Caragea, Dr. Rajiv Ratn Shah, Ramit Sawhney

December 2019 - June 2020

Language agnostic stereotypical bias detection and elimination from Natural Language Processing pipelines. Developed a three staged attention-based unsupervised bias-mitigation pipeline.

Dr. Rajiv Ratn Shah, Ramit Sawhney, Puneet Mathur

August 2019 - November 2019

Hatespeech detection in code-mixed languages: Studying the problem of hate speech detection in Hindi-English code mixed tweets. Incorporating graph convolutional modeling for automated detection of hatespeech connotations on Twitter.

IIT Delhi, New Delhi, India

Dr. Chetan Arora, Dr. Krithika Rangarajan

December 2019 - April 2020

Breast cancer detection: Working on detecting masses and calcification in malignant and benign breast mammograms and classification using those detected masses. Major focus of the work is on detecting very small masses accurately for pre-mature detection of cancer infected cells.

Delhi Technological University, New Delhi, India

Dr. Anil Singh Parihar

March 2019 - March 2020

Using transformers to classify sketches in the QuickDraw dataset. Modeling the temporal nature of the sketches using Transformers thereby incorporating the ordinal information present in the vectorised images in order to perform real-time classification of sketches.

Sonika Dahiya

January 2020 - May 2020

Open-Domain Suggestion Mining: Modeling the temporal nature of the sketches using Transformers thereby incorporating the ordinal information present in the vectorised images in order to perform real-time classification of sketches.

PUBLICATIONS

Shivang Chopra*, Gaurav Jain*, Dr. Krithika Rangarajan and Dr. Chetan Arora. “*Detecting Breast Cancer While it is Curable: Detecting Small Masses in Mammography*”. To appear at 23rd International Conference On Medical Image Computing Computer Assisted Intervention, MICCAI, 2020.

Shivang Chopra, Ramit Sawhney, Puneet Mathur, Rajiv Ratn Shah. “*Hindi-English Hate Speech Detection: Author Profiling, Debiasing, and Practical Perspectives*”. In the proceedings of the AAAI Conference on Artificial Intelligence 34 (01), 386-393 ([Paper](#))

Puneet Mathur, Ramit Sawhney, **Shivang Chopra**, Maitree Leekha and Rajiv Ratn Shah. “*Utilizing Temporal Psycholinguistic Cues for Suicidal Intent Estimation*”. In the proceedings of 42nd European

Conference on IR Research, ECIR 2020, 265-271. ([Paper](#))

Shivang Chopra*, Shreya Singal*, Tanishq Goel* and Sonika Dahiya. “*Open Domain Suggestion Mining Leveraging Fine-Grain Analysis*”. To appear at 6th IEEE International Conference on Multimedia Big Data, IEEE BigMM 2020. ([Pdf](#))

Shivang Chopra*, Gaurav Jain*, Suransh Chopra* and Anil Singh Parihar. “*TransSketchNet: attention-based Sketch Recognition using Transformers*”. (Highlight Paper) To appear at 24th European Conference on Artificial Intelligence, ECAI 2020. ([Pdf](#))

Shivang Chopra*, Gaurav Jain*, Suransh Chopra* and Anil Singh Parihar. “*Attention-Net: An Ensemble Sketch Recognition Approach using Vector Images*”. Under review at IEEE Transactions on Cognitive and Developmental Systems.

Shivang Chopra*, Suransh Chopra*, Ramit Sawhney*, Puneet Mathur, Rajiv Ratn Shah. “*Language Agnostic Unintended Bias Detection and Elimination*”. Under review at 29th ACM International Conference on Information and Knowledge Management, CIKM, 2020.

** indicates equal contribution*

WORK EXPERIENCE

UpGrad, New Delhi, India

Data Science Instructor

July 2019 - October 2019

Taught basic and advanced data science concepts to a batch of 50 students. The topics included basics of Python, Statistical Machine learning, Exploratory Data Analysis and basic Deep Learning concepts.

CodeNation, Bangalore, India

Software Development Intern, Team CodeGraph

May 2019 - July 2019

Responsible for adding Python and Javascript support to the CodeGraph platform offered by the company for the graphical representation and analysis of code. Also developed plugin for Atom IDE for displaying information from the Codegraph directly in the code editor. Lastly, made a generic pipeline for the addition of new language support to Codegraph using Language Servers.

Hewlett Packard Enterprise, Singapore

Big Data Intern

December 2018

Implemented Hadoop Clusters from scratch, followed by setting up Ambari clusters and building applications on Hive, Sqoop, and Kafka.

Coding Blocks, New Delhi, India

Teaching Assistant (Machine Learning)

August 2018 - November 2018

Worked as a teaching assistant for the Machine Learning course offered by the company. Conducted several doubt clearing sessions on topics related to core machine learning like Linear, logistic regression, Random Forests, and Support Vector Machines.

ACHIEVEMENTS

Scholarships: **Microsoft Research Travel Grant**, **AAAI-20 Student Scholarship**

Secured **2nd position** at the **Infosys Digital Makeathon** organised by **Infosys** (October 2018)

Stood **sixth** among 800 participants from all over India in the GE Healthcare Challenge organised by **General Electric, Bangalore**. (December, 2018)

VOLUNTEERING & SOCIAL OUTREACH

Student Volunteer at BigMM-2020. Responsible for smooth transitions between the research presentations. Also assisting the chairs by taking notes for the sessions.

Co-Founder and Machine Learning Instructor, OPTIMA-DTU Co-founded a college level Special Interest Group on Deep Learning and Machine Learning. Curated content based on Python, Machine learning, Data Science and Deep Learning concepts and taking online video lectures on the same. (September 2018 - Present)

Executive Core and Game Development Mentor, IOSD-DTU Taught sophomores at my college the basic principles of 2D, 3D Game Development in Unity3D along with the basics of Augmented and Virtual Reality. (May 2018 - August 2019)

Action Volunteer, Greenpeace India Have been actively involved in environmental work done by Greenpeace India including Yamuna bank cleaning, Tree plantation drives.

PROGRAMMING

Python, C++, Java, Kotlin, C, MySQL