Raghav Kapoor

Software Analyst at Goldman Sachs | B.E (Hons.) Computer Engineering, NSIT Delhi

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EDUCATION

- **Netaji Subhas Institute of Technology (NSIT), Delhi University** — New Delhi, India
  B.E.(Hons.) - Computer Engineering; CGPA: 9.11/10.0 (Top 10 of 200 students in Dept.) [2015-2019]
  Courses: *Operating Systems, Data Structures, Analysis Of Algorithms, Artificial Intelligence, Compiler Design, Automata and Formal Language, Computer Architecture, Networking, Databases, Microprocessors, Computer Graphics, Expert Systems*

- **Amity International School, Mayur Vihar** — New Delhi, India
  AISSCE Class XII (Computer Science); Grade: 96.2% (Ranked 2nd in a class of 180 students) [2013-2015]
  AISSCE Class X; CGPA: 10.0/10.0

WORK EXPERIENCE

- **Goldman Sachs** — Bengaluru, India
  - **Software Development Analyst** *[Jun 2019 - Present]*
    - Currently working in GS Electronic Trading (HFT) platforms team in the Global Markets division to help build the platform that facilitates the trading for institutional clients through ultra low latency systems using Java, Spring and C++.
    - Leveraged the deep understanding of large scale distributed systems, low latency microstructure architecture to enhance load capacity of (OM2) order management system by 50% and increased revenue by 20% on a daily basis.
    - Worked in the US exchange connectivity team to build applications to connect to new exchanges in US in order to increase liquidity, handle support queries from the trading desk and drive projects with external vendors like Fidelity.
    - Developed a tool (GenDist) for EMEA markets to effectively handle inventories of short sell locates and distribute them among clients optimally using mathematical models based on client needs and allowances.
    - Attended 14 day training program at NY headquarters to gain financial know-how and network with leaders of the firm.
  - **Software Development Intern** *[May 2018 - Jul 2018]*
    - Interned in the GS Electronic Trading team to create a web based monitoring solution using Python, Flask, Shell that curates all host related information from single API and performs health check for hosts to enhance the resiliency.
- **Hackerearth** — New Delhi, India
  - **Freelance Problem Setter and Editorialist** *[Oct 2018 - Jan 2019]*
    - Problem setter and editorialist for various online competitive programming contests.
    - Created new problems for official monthly contest on Hackerearth - Hourstorm 7 which had a participation of ∼1k.

RESEARCH EXPERIENCE

- **Netaji Subhas Institute of Technology** — New Delhi, India
  - **Student Researcher** *[Feb 2019 - May 2019]*
    - Advisors: Prof. M.P.S. Bhatia, Prof. Preeti Kaur
    - Researched in the domain of NLP to create dependency parsed embeddings using a corpus of Hindi movie reviews
    - Used POS tagging and dependency based parser to create Hindi embeddings of different window sizes and dimensions and compare their results with vanilla embeddings, Twitter Word2Vec, FastText Hindi, GloVe, Bert on Hindi datasets [code]

- **MIDAS Lab, IIIT-Delhi** — New Delhi, India
  - **Research Intern** *[Aug 2018 - Feb 2019]*
    - Advisors: Prof. Rajiv Ratn Shah, Prof. Ponnurangam Kumaraguru, Prof. Roger Zimmermann
    - Worked on offense and abuse detection in the code-switched pair of Hindi and English using LSTM and transfer learning.
    - Developed a ternary classification model to achieve SOTA results for Hinglish offensive text classification over HEOT dataset
    - Attended and presented paper at AAAI-19 conference in Hawaii partially funded by AAAI [poster] [video] [blog]

PUBLICATIONS

- **Transfer Learning for Detecting Hateful Sentiments in Code Switched Language:** K Rajput, **R Kapoor**, P Mathur, P Kumaraguru, RR Shah, Deep Learning-Based Approaches for Sentiment Analysis, Springer [2020]
- **Mind your language: Abuse and offense detection for code-switched languages: R Kapoor**, Y Kumar, K Rajput, RR Shah, P Kumaraguru, R Zimmermann, Association for the Advancement of Artificial Intelligence (AAAI) [2019]
  [Winner of Best Student Poster Award]

SKILLS

- **Languages** C/C++, Python, Shell Scripting, Java, Javascript, C#, SQL
- **Technical Skills** Machine Learning, Natural Language Processing, Competitive Programming, Web Dev, Android
- **IT Constructs** Linux, Data Structures, Algorithms, DBMS, Distributed Systems, System Design, Socket Programming
- **Libraries/Frameworks** Keras, Tensorflow, NLTK, Scikit Learn, Flask, Node.js, Unity3D, React, Groovy, Rasa NLU, OpenCV

PROJECTS

- **Dvesh Prahari: Attackers in Disguise (B. Tech Project Thesis)**   *[May 2019; Currently Working on Publication]*
  - Deals with detecting hate speech and sarcasm in political memes and twitter pages in context of code-switched languages
  - Curated and annotated an IPM (Indian Political Memes) dataset and proposed a CNN-LSTM model using self trained code-switched embeddings that processes image and text separately for state-of-the-art results in this domain
  - Improvised further on the model accuracy and pre-processing techniques post thesis and working on a paper. [preprint][code]
  - **Tech Stack:** Python, NLTK, Keras, Scikit-learn

- **PropSafe (Winner, Smart India Hackathon'19)**   *[Jan 2019 - Mar 2019]*
  - A web application designed to automate the land/real estate transaction system used by land registry offices in India.
  - Detects property frauds using AI based solution and smart contracts/blockchain for maintaining tamper free records
  - **Tech Stack:** ML - Python, Scikit-learn, Keras; Blockchain - Truffle, Javascript; Web app - Node.js, HTML, CSS [code][ppt]

- **UPCHAAR - Medical Appointment System (Finalist, Smart India Hackathon'18)**   *[Feb 2018 - Apr 2018]*
  - Developed a central portal for patients, doctors and hospitals to manage and provide efficient healthcare by improving appointment scheduling in hospitals with provision to followup, rescheduling and SMS or app notifications.
  - **Tech Stack:** Python, Django, Java, Android, HTML, Bootstrapper [code] [ppt]

- **A-VOID (Independent Project)**   *[Oct 2017 - Dec 2017]*
  - Developed a novel fun filled arcade game involving the concepts of circles and packing efficiencies with 2 game modes, 25 levels and in app purchases. Previously hosted on the google play store world wide with 4800+ downloads and 4.7 star rating.
  - **Tech Stack:** Unity3D, C# [code] [demo]

SCHOLARSHIPS AND GRANTS

- **AAAI-19 Travel Grant** Granted $500 by AAAI foundation to present my paper during AAAI-19 at Hawaii

- **Merit Scholarship for Academic Excellence (NSIT)** Awarded twice for being among the top 5% in COE department

HONORS AND AWARDS

- **Awarded Triple Crown, Escalator Award, Pioneer Gold Award**, Toastmasters International for Public Speaking [2020]
- **Finalist (Top 10)**, GS ML Hackathon'19 (Built a self-learning NLU based chatbot for investment managers) [2019]
- **Winner**, Smart India Hackathon' 19 (India's largest hackathon), Govt. of India (Won Rs. 100000 for project PropSafe) [2019]
- **Best Poster Award**, AAAI-19 (Mind Your Language: Abuse and offense detection for code-switched languages) [2019]
- **Qualified for ICPC regionals**, ACM ICPC - 18 (Represented college at Gwalior regionals) [2018]
- **Grand Finalist**, Smart India Hackathon'18, Govt. of India (Invited to Kolkata for finals for project UPCHAAR) [2018]
- **2nd Position**, Inter college algo programming challenge (Algowls) at Deen Dayal Upadhyay college with 50+ teams [2017]
- **Qualified for Indian National Astronomy Olympiad**, HBCSE (Among top 300 or 1%ile nationwide) [2014]
- **Proficiency in German language**, Cleared Fit in Deutsch (German proficiency test) levels A1 and A2 [2013]

VOLUNTEERING EXPERIENCE

- **Volunteer at Community Team Works (CTW), Goldman Sachs [Aug 2019 - Present]**   Bengaluru, India
  - Prepared educational material for intellectually challenged adults at Diya Foundation (partner NGO) to develop financial skills.
  - Spent time with under privileged students at Shristi Academy (partner NGO) to help them with their problems and needs.
- **Community Helper at Premala Bai Chavan School For The Deaf [Jan 2021 - Sep 2021]**   New Delhi, India
  - Associated with the school and helping the students and teachers in their educational needs virtually.
  - Also, participated in food distribution activities for the school students.

POSITION OF RESPONSIBILITY

- **GS Walk the Talk Toastmasters Club**   Bengaluru, India
  Club Mentor [Jan 2020 - Present] | VP, Membership [Jan 2021 - Jun 2021] | Secretary [Jul 2020 - Dec 2020]
  - Handle member concerns and maintain influx of new members into the club and handle administrative tasks of the club.
  - The club has won Golden Gavel, Club d'Elite awards under my leadership for completing membership targets.
  - Working on mentoring fellow toastmasters to deliver polished speeches in front of a wide audience.

- **Algorithm Society of NSIT (ASN)**   New Delhi, India
  Senior Board Member and Educator   *[Aug 2016 - May 2018]*
  - Instructor at weekly SIGs at ASN - Taught data structures and algorithms to freshers and sophomores.
  - Worked on core membership team and increased membership count by 100% within an year.

- **Research Methodology and Scientific Writing Workshop**   New Delhi, India
  Organizing Committee Member   *[Feb 2017 - Mar 2017]*
  - Organized a workshop for PhD scholars of computer engineering department which helped them to have a deeper understanding of LaTeX and scientific paper writing methodologies.