

KESHAV BANSAL

Senior Undergraduate
Department of Computer Science and Engineering
Indian Institute of Technology, Kanpur

keshavb@iitk.ac.in ✉
<https://keshav22bansal.github.io> 🏠
keshav22bansal 🌐 | keshav22bansal in
+91-8130557347 📞

EDUCATIONAL QUALIFICATIONS

| Year | Degree | Institution | CGPA/% |
|-------------------|-------------|--|-----------|
| July'17 – Present | B.Tech, CSE | Indian Institute of Technology, Kanpur | 10.0/10.0 |
| 2017 | CBSE – XII | Ahlcon Public School, New Delhi | 96.2% |
| 2015 | CBSE – X | Apeejay School, Noida | 10.0/10.0 |

PUBLICATIONS

[1] Ayush Kumar*, Harsh Agarwal*, **Keshav Bansal***, Ashutosh Modi: **BAKSA at SemEval-2020 Task 9: Bolstering CNN with Self-Attention for Sentiment Analysis of Code Mixed Text**. *Proceedings of the 14th International Workshop on Semantic Evaluation (SemEval-2020)* * : Equal Contribution

PROJECTS

Code Mixed Sentiment Analysis arxiv.org/abs/2007.10819 📄

Research Project under Prof. Ashutosh Modi Jan 2020 - June 2020

- Participated in Task 9 of SemEval-2020 shared task for sentiment analysis in bilingual code-mixed tweets.
- Used self-attention mechanism to bolster the performance of prevalent CNN architecture by creating an ensemble model.
- Utilized multilingual XLM-Roberta Language Model (a variant of Bert) for sub-word embeddings.
- Ranked *5th out of 62 teams* for Hindi-English subtask with an F1 score and recall of 0.707 and 0.705 respectively.

DeCaptcha keshav22bansal/DeCaptcha 🌐

Course Project October 2019

- Implemented techniques like contour detection and image segmentation to break captcha into individual letters.
- Trained a five-layer CNN model for character recognition using the provided training set of 2000 images.
- Obtained an accuracy of *99 %* on the test set.

Log Analyser App SnehalRaj/LogAnalyser 🌐

Nutanix Cloud Init.io Hackathon March 2019

- Developed a web app to handle log messages generated by microservices distributed across multiple hosts.
- Included features like live debugging, searchable exception patterns, and statistical graphs.
- Declared the *winning* submission.

Dcipher keshav22bansal/Dcipher.hs 🌐

Course Project March 2019

- System for automatic solution of substitution ciphers in Haskell using functional programming, operating on stochastic local search over the space of 10^{26} possible keys.

GemOS System Calls

Implemented file system and paging management syscalls October 2019

Transaction Manager App keshav22bansal/MoneyManager 🌐

Mobile app for logging monetary transactions October 2019

HONOURS & AWARDS

- 2017-2020 **Academic Excellence Award**, for meritorious scholastic performance, IIT Kanpur
- 2017-2020 **Received 11 A* grades**, for outstanding performance
- 2018 **J.N. Kapur prize**, for the *best sophomore* in Maths Courses
- 2017 **All India Rank 782**, JEE Advanced
- 2017 **All India Rank 59**, JEE Main
- 2017 **All India Rank 440**, KVPY Scholarship

RELEVANT COURSES

Natural Language Processing, Introduction to Machine Learning, Image Processing (*i*), Big Data Optimization (*i*), Numerical Computation (A*), Data Mining (*i*), Data Structures and Algorithms, Computer Graphics, Computer Organization, Compiler, Computer Networks, Discrete Mathematics, Linear Algebra (A*), Computational Physics (A*)

A*: Grade for exceptional performance, *i*: In progress

WORK EXPERIENCE

Microsoft

Hyderabad, India

Software Development Intern

May 2020 - July 2020

- Worked in the Azure Compute group to enhance the boot time of virtual machines.
- Analyzed the performance of production algorithm on variety of OS images and benchmarked the optimal values of some critical parameters.
- Made modifications to burst the maximum throughput available for a crucial period of time, leading to an improvement of *20 %* in the booting time.

Learngram

Bangalore, India

Data Science Intern

July 2020 - August 2020

- Built a Deep Learning model to map questions to a set of candidate concepts (topics) in Mathematics domain.
- Modelled the problem as finding semantic similarity between long documents and used a Siamese network.
- Used triplet loss for generating better rankings and extractive summarization to abridge long documents.
- Obtained 65% recall@3 and 75% recall@5.

Praktice.ai

Bangalore, India

Data Science Intern

May 2019 - July 2019

- Emulated Google's suggested clip feature for answering medical queries by playing a short video clip.
- Used named entity recognition, and TF-IDF weighted word2vec model vectors for word representations.
- Devised an algorithm to suggest ailments given a set of observed symptoms, based on medical data.

Summer of Code

Kanpur, India

Full Stack Development Intern

May 2018 - July 2018

- Developed Web and Android application allowing users to donate excess food to nearby food charities.
- Technology used - PHP, SQL Server database, Google distance matrix API, Geolocation API, Send Grid API, Microsoft Azure Cloud.
- Awarded the *second runner up* title among 21 teams.

SKILLS

Programming: Python, C++, C, Haskell, Matlab

Libraries: PyTorch, Tensorflow, NLTK, Scikit-learn

Web: React, JavaScript, PHP

Utilities: Shell Utilities, Git, MongoDB, L^AT_EX, Vim

MISCELLANEOUS

- **Tutor** for **Introduction to Programming** course, 2020
- Selected for **Google Research's AI summer school**, 2020
- **Silver medalist** at *Bitgrit Data Science Competition*, 2019
- **Project Mentor** for **Probabilistic ML** at *Association of Computing Activities, IIT Kanpur*, 2020
- **Company Coordinator** at *Student's Placement Office, IIT Kanpur*, 2018