

Mohd Abbas Zaidi

Education

- 2015–2019 **Indian Institute of Technology Kanpur**,
Major in Electrical Engineering, Minors in Machine Learning & Applications and Cognitive Science.
Bachelor of Technology- **Institute Rank 1**(Highest GPA in Class of 2019), GPA – **10.0/10.0**
- 2014 **City Montessori School, Lucknow**,
Indian School Certificate(ISC) Examination, Class 12.
Percentage – 96.50%
- 2012 **Anand Bhawan High School, Barabanki**,
The Indian Certificate of Secondary Education(ICSE), Class 10.
Percentage – 92.40%

Experience

- Sep 2019– **Software Engineer | Next AI Solutions**, SAMSUNG RESEARCH HQ, Seoul.
Natural Language Processing and Speech Recognition Group.
 - Currently working with the research group tackling problems related to Machine Translation and ASR
 - Work published with ACL 2020, can be found in the publications section
- May 2018–Jul 2018 **Natural Language Processing Intern**, SAMSUNG RESEARCH HQ, Seoul, South Korea.
Generating well-formed answers for AI assistants and chatbots.
 - Reached the top of leaderboard for MICROSOFT'S MS MARCO Intermediate challenge.
 - Generated more verbose non-span based answers using words from out of vocabulary
 - Results published on Samsung Newsroom [website](#) and many other [AI/ NLP](#) blogs
 - Modified the existing ConZNet architecture as per the dataset to speed up the processes
 - Reached Advanced level proficiency in the internal assessment through Samsung's Software tests
- May 2017–Jul 2017 **Research Intern**, INDIAN SPACE RESEARCH ORGANIZATION-IITK SPACE CELL, Kanpur, India.
STTC + Total Variation based Robust Multimedia Reconstruction.
 - Incorporated the bounded variation property of images into Space Time Trellis Codes
 - Designed a single novel joint decoder for both for maximum likelihood and total variation metric
 - Established the superiority of joint algorithm based on theoretical STTC bounds and PSNR results
 - Work was [published](#) in IEEE Access Journal (Volume: 8), April 2020
- May 2019–Jul 2019 **Machine Learning & Development Intern**, POCKETFM, Bengaluru, India.
Machine Learning
 - Made the search language agnostic between hindi, english & hinglish semantically and syntactically
 - Used ALS Matrix factorization on RDD database to build recommendation system for the App
Backend Development
 - Deployed a centralized back-end logging system(ELK stack) to automate the process of monitoring error logs
 - Deployed a shipped, filter an indexing framework, dashboards and a mechanism to provide burst error alerts

Publications

- May 2020 **Hierarchical Trellis Based Decoder for Total Variation Sequence Detection (TVSD) in Space-Time Trellis Coded (STTC) Wireless Image/Video Communication**, *IEEE Access Journal*.
Ankit Kudeshia, **Mohd Abbas Zaidi**, Aditya Jagannatham, Chandra Prakash
- Jul 2020 **End-to-End Simultaneous Translation System for IWSLT2020 Using Modality Agnostic Meta-Learning**, *ACL 2020*.
Houjeung Han, **Mohd Abbas Zaidi**, Sathish Indurthi, Nikhil Kumar, Beomseok Lee, Sangha Kim

Jul 2020 **End-to-End Offline Speech Translation System for IWSLT 2020 using Modality Agnostic Meta-Learning**, *ACL 2020*.

Nikhil Kumar, Beomseok Lee, Sathish Indurthi, Houjeung Han, Mohd Abbas Zaidi, Sangha Kim

Awards & Achievements

May 2020 **Samsung Foldable App Hackathon**, *Samsung Research*.

Won the 2nd prize after idea-conception, design and development of a new application for Samsung Galaxy Fold

Jun 2019 **Professor Putcha Venketeswarlu Memorial Gold Medal**, *IIT Kanpur*.

Best academic performance among all the graduating 4-year undergraduate students in the class of 2019

Jun 2019 **General Proficiency Medal**, *IIT Kanpur*.

Best academic performance among all the graduating 4/5 year undergraduate students in the department of Electrical Engineering

Mar 2019 **Lalit Narain Das Memorial Scholarship**, *IIT Kanpur*.

Highest CGPA among all the final year undergraduate students in the department of Electrical Engineering

Feb 2019 **Smt Dharm Vati Garg Scholarship**, *IIT Kanpur*.

Highest CGPA among all the undergraduate students in the final year across all departments

Mar 2018 **Anita & Santoshi Mehra Foundation Scholarship**, *IIT Kanpur*.

Highest CGPA among all the pre-final year students in the department of Electrical Engineering

2015-2018 **Academic Excellence Award**, *IIT Kanpur*.

Awarded for all the three consecutive academic sessions based on annual academic performance

2014- 2019 **Academics**.

- Outstanding(A*) grade in 19 out of 44 courses done during the undergrad coursework
- Highest marks in at least 9 courses during the undergrad coursework including courses with over 400 students
- 99.98 percentile among 1.3 million candidates appearing for Joint Entrance Examination in the year 2015
- Ranked among top 1% students in India among those appearing for the Indian School Certificate examination

Mar 2018 **ELECTRADE, Techkriti**, *IIT Kanpur*.

Runner Up, National Level on the spot Electronic Circuit building competition

Jun 2017 **SURGE**, *IIT Kanpur*.

Received Student's Undergraduate Research Grant for Excellence 2017 at the MWN Lab, IIT Kanpur

Selected Projects

Aug 2017–Nov 2017 **Convolved Neural Network based Real Time Sentiment Analysis**, *Prof. Purushottam Kar, CSE, IIT Kanpur*.

- Detects the emotion of the user based on movement of facial muscles taking in webcam feed
- Achieved an accuracy of over 70% from a set of 6 different emotions in real time
- Employed Lenet, Mobile Nets and Alex Net for the task, finally AlexNet was used
- Finds application in deriving **true user reviews** free from implicit biases

Jan 2018– Apr 2018 **Detecting Semantically similar questions**, *Prof. Harish Karnick, CSE, IIT Kanpur*.

- Building a binary classification algorithm which predicts whether two questions are similar or not.
- Proposed a pre-processing approach based on 'Mental Lexicon' concept from Psycho-linguistics.
- Self-Implemented Siamese and Erolog network finally gave the best accuracy.
- Developed linguistic constraints to improve the performance of the existing methods to over 85%.

Jul 2018- Jan 2019 **Removing the Sample Bottleneck Constraint from Gaussian Process Regression**, *Prof. Ketan Rajawat, SpIN Lab, EE, IIT Kanpur*.

- Aiming to remove the bottleneck due to N^3 dependence of GP updates on the training sample size.
- Trying to make Gaussian Processes more suitable for online settings.
- Established the superiority of Parsimonious Online Processes over Sparse Online Gaussian Process

Aug 2018- Dec 2019 **Coherent Sentence & Paragraph Reordering**, *Prof. Arnab Bhattacharya, CSE, IIT Kanpur*.

- To build a data-set for the problem of coherent sentence and paragraph reordering.
- To design multiple deep-net architectures suitable for the above mentioned task
- Coherent reordering finds applications in multi-document summarisation and even QA systems.

Feb 2019- Apr 2019 **Image Processing: Object Detection & Analysis**, *Prof. KS Venkatesh, EE, IIT Kanpur*.

- To detect simple shapes and objects from an Image using only bottom up IP techniques
- To analyze the objects and output basic features like shape and dimension

- Jul 2018- Jan 2019 **Kernel Approximation Techniques, Prof. Ketan Rajawat, EE, IIT Kanpur.**
- To analyze kernel approximation techniques & to extend their application in constrained settings
 - Got credit for extraordinary work done during the term paper under the course EE604

Skills

- Languages Python, C/C++, Java
- Frameworks Keras, Tensorflow, Apache Spark: PySpark, Redis
- Software/ Packages MATLAB, Android Studio, Arduino IDE, Processing

Relevant Courses

- Machine Learning Introduction to Machine Learning, Introduction to Natural Language Processing, Data Mining, Convex Optimization, Image Processing
- Cognitive Science Foundations of Cognitive Science, Neurobiology, Human Perceptual Processes, Computational Cognitive Science, Psychology of Language
- Electrical Engineering Digital Signal Processing, Principles of Communication, Communication Systems: Information Theory, Coding Theory, Introduction to Wireless Communication, Signals-Systems & Networks, Introduction to Electronics, Microelectronics, Digital Electronics, Control Systems Analysis, Electromagnetic Theory, Power Systems
- Mathematics Probability & Statistics, Linear Algebra, Differential Calculus, Ordinary/ Partial Differential Equations, Complex Variables(Calculus)
- Humanities Introductory Sociology, Introduction to Economics, Social Psychology

Teaching

- Jan 2019- Apr 2019 **Electrical Engineering Lab, IIT Kanpur, Teaching Assistant, EE381A, Prof. Baquer Mazhari.**
- Mentored students during the project component of the course
 - Compiled resources related to Electronic Circuit experiments to help students decide the project
- Apr 2016- Apr 2017 **Counselling Service, IIT Kanpur, Academic Mentor, ESC101A, Fundamentals of Computing.**
- To mentor freshmen by conducting classes at Institute and Hostel level in a basic programming course
 - Held one-to-one mentoring sessions for students with unsatisfactory performance in the course

Extra Curriculars

- Feb 2020- Present **IIT- Alumni Association, South Korea, Vice President, Operations.**
- Responsible for website management and event planning in the organisation
- Feb 2017- Mar 2018 **Counselling Service, IIT Kanpur, Member, Core Team Operations.**
- Mentored the students placed under academic probation by the institute to help them return to normalcy
 - Led a team of 138 Student Guides while conducting 6-day Orientation Programme for freshers
 - Conducted Personality Enhancement Classes with the help of professional counsellors during the summer break
- Jul 2018- Mar 2019 **Grievance Redressal Committee, IIT Kanpur, Member, Director, IIT Kanpur.**
- Looked into irregularities during the conduction of general elections to various posts of Student's Gymkhana
 - Recommended cancellation of elections for a couple of executive posts based on the malpractices committed
- Aug 2016-Feb 2017 **Counselling Service, IIT Kanpur, Student Guide.**
- Mentored a group of 8 students from the junior batch throughout their stay at the campus
- Aug 2016-Feb 2017 **Students Placement Office, IIT Kanpur, Company Coordinator.**
- Coordinated the conduction of tests and interviews for a number of firms during the recruitment drive
- Aug 2018-Apr 2019 **Students Gymkhana, IIT Kanpur, Senior Year Mentor.**
- Mentored around 20 freshmen in issues related campus-life during the final year at college
- Jun 2016- Oct 2016 **Antaragni, IIT Kanpur, Senior Executive, Public Relations.**
- Performed shortlisting and database management of dignitaries and artist for a plethora of events