# Abhishek Niranjan

http://abhishek-niranjan.github.io

Email : abhishek.niranjan.iitkgp@gmail.com

Mobile : (+91)-8513902048


## Education

- **Indian Institute of Technology(IIT)** — Kharagpur, India
  *Bachelor + Master of Technology in Computer Science; CGPA: 7.96/10.0* — *July 2013 – July 2018*

## Experience

- **Samsung Research Institute** — Bangalore, India
  *Senior Software Engineer* — *Jun 2018 - Present*
  - **Grapheme-to-Phoneme (G2P)**: Bixby is a voice assistant indigenous to Samsung smart devices. As a part of *Automated Speech Recognition(ASR)* team, I built Copy-Augmented Encoder-Decoder Bi-LSTM based architecture to achieve state-of-the-art results.
  - **Grammatical Error Correction(GEC)**: Approached the GEC problem as a sequence-2-sequence task with (hypothesis, reference) as the (source, target) sentence pair. Modified Transformer architecture to handle attention from multi Encoders in an hierarchical fashion for on-device textual processing module in smartphones.
  - **Speech-to-Speech Translation**: Presently working on translation problem involving conversion of Korean audio signal features to English audio signal features. Using Transformer model as the fundamental sequence-to-sequence architecture with addition of auxiliary decoders to train on parallel tri-phone aligned data.
- **Amplus Solar** — Gurgaon, India
  *Data Science Intern* — *May 2017 - July 2017*
  - **Soiling Rate**: Photovoltaic plants experience soiling phenomena which results in decrement of power generation. Developed an algorithm to compute the soiling rate from limited data to devise a *cost-optimized* cleaning schedule of solar plants.
  - **Power-Generation Forecasts**: Engineered a forecasting module to predict hourly active power generation by a PV plant using *gradient boosted trees.* achieving a correlation of 0.97; Augmented the feature set by utilizing OpenWeatherMap API.
  - **Power-BI Reports**: Automated the generation of daily visualization reports of Solar Plants portfolio in *Power BI* by connecting MySQL server hosted on AWS EC2 instance. Built a GUI application using *PyQt*4 to facilitate the data downloading from multiple dashboards.
- **Bidgely Technologies** — Bangalore, India
  *Data Science Intern* — *May 2016 - July 2016*
  - **Vacation Detection**: Bidgely's energy disaggregation technology helps consumers and utilities to adopt eco and pocket friendly consumption. Devised a sliding window algorithm to predict the vacation instances of the residents in *MATLAB with precision >95% and recall >70%,* which got incorporated into production
  - **Refrigeration Consumption**: Worked on the energy disaggregation module to compute refrigerator consumption from low resolution energy data, which was pushed to disaggregation pipeline.
- **Outsy Inc.** — Mumbai, India
  *Application Developer Intern* — *May 2015 - July 2015*
  - **Information Retrieval**: Outsy is a lifestyle and event recommendations android application. Extracted artists' names from 15,000 Facebook textual posts using *Stanford POSTagger* after NLTK assisted pre-processing; Generated artists' profile database using *Wikipedia API, Youtube API, and SoundCloud API.*

## Publications

- **Abhishek Niranjan**, M A B Shaik. (2019). *Improving grapheme-to-phoneme conversion by investigating copying mechanism in recurrent architectures.* ASRU 2019
- Ankan Mullick, Anindya Bhandari, **Abhishek Niranjan**, Nitesh Sekhar, Shrey Garg, Riya Bubna, Mayank Roy. (2018). *Drift in Online Social Media.* IEMCON 2018
- Mayank Singh, **Abhishek Niranjan**, Divyansh Gupta, Nikhil Angad Bakshi, Animesh Mukherjee, Pawan Goyal. (2017). *Citation sentence reuse behavior of scientists: A case study on massive bibliographic text dataset of computer science.* JCDL 2017

## Projects

- **Sign Language Translation**: Translation of American sign language gestures to text using flex sensing gloves.
- **Data Extractor from 2D Plots**: A graph extractor that detects plots in any PDF and digitizes the graphs.
- **Optimal Bidding**: Cost optimization algorithm employing solar power prediction to manage a gated community's electricity requirements; Our algorithm secured 1$^{st}$ place in the Inter-IIT 2018 data science competition.

## Skills

- **Languages**: Python, C++, SQL
- **Frameworks & Libraries**: TensorFlow, PyTorch, Keras, Scikit-learn
- **Softwares & Tools**: MATLAB, Tableau, Power-BI, Git
- **Documentation**: LaTeX