

# Sugam Garg

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## EDUCATION

M.S. in Natural Language Processing (NLP)

UC Santa Cruz

2022 - Aug 2023\*

B.E. in Computer Science

BITS Pilani

2014 - 18

## TECHNICAL SKILLS

- Python, Transformers, TensorFlow, PyTorch, Scikit-learn, FastAPI, Elastic Search, Machine Learning, Natural Language Processing, Prompting, AWS, MLFlow, WandB, C++

## WORK EXPERIENCE

- **Senior Data Scientist, Freshworks** Nov 2020 - Sep 2022
  - **Building a unified search service for chatbot**
    - \* Developed a monolith service for search to suggest documents for a natural language query - [Blog](#) - \$40k/year infra cost saving and inference time reduction by 3x.
    - \* Generated a labeled dataset of 14k queries for search using various query generation methods.
    - \* Finetuned a pre-trained transformer-based model on above dataset. Indexed documents and their vectors in an ElasticSearch(ES) service for vector similarity search. F1-score improvement by 17%.
- **Senior Software Engineer at Samsung R&D, Bangalore** Mar 2020 - Nov 2020
  - **Enhancing voice dictation output to include multimodal text & punctuation on-device**
    - \* Built a CNN-based model for analyzing emotion and boundaries in the voice-transcribed text.
    - \* Developed a novel memory-efficient transformer model to auto-punctuate a voice-dictated text.
    - \* Developed C++ library to integrate above models to add emoticons and punctuation.
- **Software Engineer at Samsung R&D, Bangalore** July 2018 - Feb 2020
  - **Samsung Keyboard - Neural Language Model (LM)**
    - \* Improved key KPIs of Samsung Neural LM - model size and inference time - through knowledge distillation, quantization, and low-rank embedding optimization.
    - \* Reduced gender & entity bias from next word predictions in Keyboard - method patented


## PATENTS & PUBLICATIONS

- **Publication - [On-device document classification using Multimodal Features](#) : First Author**  
In 8th ACM IKDD CODS and 26th COMAD (CODS COMAD 2021)
- **Patent - [Systems and Method for Text Sensitivity based on Bias in Language Model](#)**

## AWARDS AND ACHIEVEMENTS

- Awarded **quarterly performance award** by CPO for **craftsmanship and quality of work**.
- **3rd prize** in Freshworks internal Hackathon for developing a multimodal (text, speech, and vision) chatbot.
- Winner of **Samsung Citizen Award(Q3 2020)** in **People & Process category(Creative Catalyst)** by SRIB MD.

## PROJECTS

- **Multilingual Tweet Intimacy Analysis**  Oct 2022 - Dec 2022
  - Finetuned the XLM-T model for predicting tweet intimacy by framing it as a regression problem.
  - Used data augmentation to achieve a 20% gain in Pearson correlation over the base approach.