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# Ashis Paul

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## ABOUT

Engineer with over 2 years of experience building products at pace and scale. Bringing in the declarative paradigm at product development. A dedicated problem solver. Experienced in almost all corners of business-driven software development. Worked extensively in **Fullstack Development** and **AI** as well as skilled in **Microservices, Deep Learning, Distributed Systems, Python, Go, Kotlin, Amazon Web Service, Low-Level Design, Algorithm, and Data Structure.**

## SKILLS

Technical Skills    Generative AI, Microservices, AWS, Next.js, RASA, Native Android

Programming languages    **Typescript**, Python, **Go**, Java, Kotlin

Soft Skills    Agile development, Problem solving, Multitasking, Teamwork

## EXPERIENCE

### Blox, Hyderabad (Remote) - Software Engineer

FEB 2023 - PRESENT

- World's first Real Estate [NER](#) (Named Entity Recognition). Developed **voice-based real estate search** which can handle contextual natural language Search - "sea facing properties in Malad east".
  - a. Contributed to the underlying **transformer-based NER model**.
  - b. Implemented the wrapper service for post-processing and integrated it into the website.
- World's sleekest real estate web app: <https://blox.xyz>
  - a. Delivered the latest iteration of Blox frontend using **Next.js**.
  - b. Build the basic design components from scratch to have a light build size.
  - c. Incorporated a **middleware (Go/BFF)** for aggregating API calls and caching.
- Chat GPT based products
  - a. Delivered **generative AI-powered** single click project listing generator from RERA-Id as input using puppeteer (Node.js) powered web-scraping and **GPT language model**.
  - b. Developed **RASA-based chatbot** which is capable of searching properties, performing actions such as site booking and answering non-domain specific questions like chat GPT (reverse [RAG](#)).
- Voice splitting and emotion analysis
  - a. Developed a novel method to separate voices in an audio using **deep feature extraction** followed by **k-means clustering**.
  - b. Worked on increasing Call Center Efficacy via **voice-based emotion detection and sentiment analyzer**.

- Generative AI in image upscaling by **Generative Adversarial Network** (GAN): Implemented an image enhancement pipeline incorporating AWS Lambda and S3 to make sure all the images on the website are AI-enhanced.
- **Convolutional Neural Network** (CNN) based image classification of property images resulted in a better showcase of the gallery of a property.
- GIS Location techniques using distance-based clustering at scale
  - a. Delivered a Live and Past location tracking system for Agents ( Relationship Managers ) using open-source low-code backend framework and corresponding DSL.  
Past tracking: <https://rm-tracker.blox.co.in>
  - b. Contributed to the low-code framework itself: <https://github.com/nmondal/cowj>

### Compass, Hyderabad - Software Engineer

JUL 2021 - JAN 2023

- Data aggregation and insights generation
  - a. Contributed to **gRPC backend services** responsible for generating insights for compass listings.
  - b. Led the code quality drive and improved unit test code coverage from 10% to 80%.
- Support and onboarding system for agents
  - a. Delivered multiple frontend features that were used by compass agents who sought technical support.
  - b. Designed and implemented a python service on the third-party support ticketing service, which helped the product team to identify the problem areas in customer support and helped the support team to **reduce the ticket resolution time by 25%**.
- Native android development
  - a. Worked with CRM and TM Android team and delivered crucial features such as Client Dashboard, Contact Import, and Household Support which are being used by over **10 thousand compass agents**.
  - b. Fixed multiple production crashes during on-call duty and refactored critical bottlenecks of the Android codebase.

### Microsoft, Bangalore (Remote) - Software Engineer Intern

MAY 2020 - JUL 2020

- Developed a pClick model to predict the clickability of Bing ads from global market data using in-house technologies like Aether and Scope.
- Studied the impact of the global model on the large and small markets where the global model performed as good (less by 0.01%) as market-specific models.

## EDUCATION

### Jadavpur University, Kolkata - Bachelor in Computer Science and Engineering

AUG 2017 - JUN 2021

First class honours with a GPA of **8.91** out of 10

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## PROJECTS

### **Inverted Bell-Curve based Ensemble of Deep Learning Models**

- Utilized the inverted Gaussian function to formulate a method of weighted average to combine the confidence scores from classifiers.
- Implemented a deep ensemble using the proposed method as a combinator function to detect COVID from 3000 chest x-ray images and achieved 99% accuracy.

### **SVM based Deep Ensemble for Music Symbol Recognition**

- Used fine-tuning of imagenet pre-trained models on music symbol datasets to build a recognizer model.
- Applied support vector machine as an ensemble combinator to combine Transfer Learning models at score level.

## PUBLICATIONS

Google Scholar: <https://scholar.google.com/citations?user=CPM11WAAAAAJ>

1. Paul, Ashis, et al. "SinLU: Sinu-Sigmoidal Linear Unit." *Mathematics* 10.3 (2022): 337.
2. Paul, Ashis, et al. "Inverted bell-curve-based ensemble of deep learning models for detection of COVID-19 from chest X-rays." *Neural Computing and Applications* (2022): 1-15.
3. Paul, Ashis, et al. "An ensemble of deep transfer learning models for handwritten music symbol recognition." *Neural Computing and Applications* (2021): 1-19.
4. Dhar, D., Chakraborty, N., Choudhury, S., Paul, A., Mollah, A.F., Basu, S. and Sarkar, R., 2020. Multilingual scene text detection using gradient morphology. *International Journal of Computer Vision and Image Processing (IJCVIP)*, 10(3), pp.31-43.