

# Ambuj Krishna Agrawal

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## EDUCATION

### Carnegie Mellon University

December 2025

NLP (Artificial Intelligence) Grad @ Language Technologies Institute (LTI), SCS

Pittsburgh, PA

- **Coursework In Progress:** Advanced Natural Language Processing, Intro to ML, Multimodal Machine Learning.

### Indian Institute of Information Technology, Allahabad

July 2021

Bachelor of Technology in Information Technology (B.Tech) - (Honors : 8.82/10)

Prayagraj, India

- **Relevant Coursework:** Artificial Intelligence, Image And Video Processing, Linear Algebra, Data Structures and Algorithms, Distributed Systems, Database Management Systems, Operating Systems.

## SKILLS

**Programming Languages:** Python; Java; C/C++; SQL; Golang

**Frameworks And Tools:** Pytorch; Keras; Spring Boot; Dropwizard; Node; Flask; React; Kafka, AWS (SQS, DDB, RDS, S3, Lambda); pinot

**Areas of Expertise:** Natural Language Processing (NLP); ML/DL; Microservices; Clean Code; Distributed Systems; SQL/NOSQL

## WORK EXPERIENCE

### CRED

Bangalore, India

#### Senior Software Development Engineer

February 2023 – July 2024

- Built core components in the bill payments platform powering services like credit cards, electricity, rent, and gift vouchers. Built zero-to-one products that added revenue stream worth **\$30 Million** a month and handled spiky traffic of more than 100 QPS.
- Solved a complex native memory leak in JVM due to memory fragmentation, cutting AWS cost by **25%** for services across CRED.
- Developed a pipeline to deploy product config at CRED's hackathon saving **\$150k** annually; team placed third in 70+ submissions.

#### Software Development Engineering Intern

February 2021 – June 2021

- Made microservices from scratch for a new line of products around *Buy Now, Pay Later (BNPL)* collaborating across verticals.

### LinkedIn

Bangalore, India

#### Software Development Engineer

July 2021 – February 2023

- Upgraded authentication cookie signatures to industry-standard ECDSA after testing on CPU, memory usage, and security benchmarks. Worked with owners of **1700+** services in a team of 4 to migrate them to new cookies for user and enterprise accounts.
- Fixed major vulnerabilities like **replay** attacks during Sign in with Google flow by caching server-side nonce.
- Integrated sign-in with Facebook to move away from passwords with a **1%** WAU increase and collaborated across verticals.
- Optimized *last seen at* timestamp processing of users reducing resources by **50%** by using Samza streams and efficient batching.

#### Software Development Engineering Intern

May 2020 – July 2020

- Re-architected the way of storing phone numbers. Also made a clustering algorithm to generate the required number of regexes for phone number validation to replace Google's "libphonenumber".

### Indian Institute of Technology BHU

Varanasi, India

#### Machine Learning Research Intern

May 2019 – July 2019

- Developed a robust high-accuracy model on bpi-12 and helpdesk data to get a 2% improvement on the results from the original research paper on Predictive Business Monitoring using LSTM and self-attention layer-based models.

## RESEARCH PROJECTS

### Indian Institute of Information Technology, Allahabad

Prayagraj, India

#### Semantic SLAM [\[Code\]](#)

Jan 2020 – July 2020

- Improved localization accuracy of **V-SLAM** by injecting semantic information of detected corner points. **Published** as the first author in the Mediterranean Conference on Control and Automation (**MED**), Athens, Greece.

#### Object detection in low light conditions

July 2019 – Jan 2020

- Built a model combining RGB and thermal inputs via SSD, improving boundary box prediction over single-modality models.

## PROJECTS

### liveAssist

2024

- Built an assistant chatbot designed to interact with live sports videos, using Generative AI APIs provided by Gemini. Enhanced its performance, by incorporating Retrieval-Augmented Generation (**RAG**) techniques.

### OxyTracker

2021

- Developed a project for the Haryana Government (India) to track oxygen cylinders during the peak of the second COVID wave, ensuring delivery from distributors to civilians and doctors using QR codes and cylinder numbers.

### learn.ai

2020

- Worked with team to make a platform to help the learning of machine learning playfully and engagingly where the users can interact with objects to make ML models and get corresponding PyTorch code in real-time.