

# Sukanya Saha

MS student at CU Boulder • Ex Machine Learning Engineer at HSBC

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## Summary

Software engineer with experience in building end-to-end highly scalable and robust applications with distributed architecture and highly skilled in statistical models, deep learning, natural language processing, and computer vision.

## Education

### University of Colorado Boulder, US - MS in Computer Science: Jan 2021 - Dec 2022

Research work:

- Personalized stylish recommender bot using **natural language processing, generative models, and computer vision**

Projects:

- Tesla 3 simulation on **Webots** with implementation of **SLAM**
- E-Commerce application with distributed backend services using **Python, Flask, JavaScript, gRPC, RAFT Protocol, Atomic broadcast, and Google Cloud Platform**
- Enhancing Privacy in **Federated machine learning** using **differential privacy**

Coursework:

- Data Structures and Algorithms, Distributed Systems, Natural Language Processing, Computer Vision, Robotics**

### West Bengal University of Technology, India - B.Tech in Electronics & Instrumentation Engineering: Aug 2012 - Jul 2016

## Work experience

### Google, USA - Computer Science Research Mentorship Program Apprentice: Sep 2021 - Present

- Receiving mentorship from a Googler to pursue computing research on **bias aware and privacy-preserving machine learning**

### University of Colorado Boulder, USA - Graduate Teaching Assistant, Principles of Programming Languages: Jan 2021 - Present

- Deliver recitation on functional programming, lambda functions etc. to a class of 300 undergrad students and help them to debug code

### HSBC, India — ML Engineer: Mar 2019 - Dec 2020

- Designed and developed a **digital customer segmentation** model using **unsupervised machine learning**
- Built a model to **predict credit card utilization** to generate offers
- Developed a web application using **topic modeling** with customers' preferences and sentiments to compare **mobile banking apps**
- Acheived **91% accuracy** on customer return to purchase ML model with efficient data collection

## Skillset (Proficient)

Programming languages

**Python**

ML libraries

**numpy** **scikit-learn**

**matplotlib** **pandas**

**plotly** **PyTorch**

**TensorFlow** **Keras**

Computer Vision libraries

**OpenCV**

NLP libraries

**spaCy** **Gensim**

**NLTK**

Web automation tools

**Beautiful Soup**

**Selenium**

Web frameworks

**Flask**

Databases

**MySQL** **BigQuery**

**MongoDB**

**MS SQL Server**

Tools

**Git** **Jupyter notebook**

## Skillset (Intermediate)

Programming languages

**Golang** **Scala** **C**

**JavaScript** **Java**

Web technologies

**gRPC** **REST** **React**

**HTML** **CSS**

Tools

**Webot** **DialogFlow**

- Developed a web-based **FAQs Chabot** using Natural Language Processing
- Gained **81% accuracy** on customer attrition ML model with high dimensional data to decrease customer churn

## Work experience

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Cognizant, India — **Data Scientist**: Aug 2016 - Feb 2019

- Increased **Recall by 5%** on customer re-purchase **predictive model** for **Marketing Analytics** team
- Built **Resume Screening** application using **OCR** to decrease average screening time from 1 week to 2 days
- Streamlined and simplified high volume customers' onboard validation process using **Text Summarization**
- Developed **CCTV surveillance in ATMs** using convolution neural network and activity recognition to reduce fraud
- Built Server Failure Prediction model on a network using anomaly detection to enhance fault tolerance

## Awards and Extra-Curricular

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- Awarded “**Above and Beyond**” in Cognizant
- Ranked **65th in Indian Engineering Olympiad**
- Academic excellence award, Future Institute of Engineering and Management
- Conducted seminar on applications machine learning in association with the Computer Society of India
- Conducted training sessions for differently-abled children in the **Indian Institute of Mother and Child** NGO
- Influenced young children for STEM education with **Adore India** NGO

## Certifications

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- Coursera **Machine Learning** by Stanford University
- **Deep Learning Specialization** by deeplearning.ai
- **Generative Adversarial Networks Specialization** by deeplearning.ai
- **Reinforcement Learning Specialization** by University of Alberta & Alberta Machine Intelligence Institute