

VIVEK KUMAR MASKARA

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[Website](#) • [Github](#) • [LinkedIn](#)

A polyglot Software Engineer, currently building privacy preserving machine learning models for ~1.8 million Bank of West customers. With strong Computer Science fundamentals and experience with Statistical Machine Learning, Data Mining techniques and deep learning models, I always tend to bring a unique perspective when solving business problems.

Education

Master of Science, Computer Science Arizona State University - Tempe, Arizona Relevant Coursework: Statistical Machine Learning, Data Mining, Cloud Computing, Data Visualization	Expected in 12/21 GPA:4.0
Bachelor of Technology, Software Engineering Delhi Technological University - New Delhi, India Relevant Coursework: Computer Graphics, Artificial Intelligence, Object-Oriented Programming, and Digital Image Processing	05/16 GPA: 3.34

Work History

Student Researcher The Luminosity Lab, ASU – Arizona, USA	02/20 to Present
<ul style="list-style-type: none">Streamlined the process of producing and delivering PPE kits by building ASU’s PPE response app using Flask, NextJS & PostgreSQL.Building a privacy preserving deep learning model for customer segmentation, churn prediction and for improving cross-selling opportunities for Bank of West<ul style="list-style-type: none">Experimented with tabular synthetic data generation to set up a data sharing pipeline using sequence to sequence models & GANs achieving ~90% statistical representation using GANs.Explored usage of PySyft to leverage federated learning and differential privacy using TensorFlow.Researching on attention based object detection model for identification of Neuroblastoma using pathological images for PCH hospital.<ul style="list-style-type: none">Experimented with pre-training on different pathological datasets to analyze transferability across domains.Exploring data augmentation, self iterative learning and attention based on classification masks to improve the network.Implemented Grad Cam for ResNet-18 in PyTorch to understand the behaviour of the modelDeveloped a MVC for reducing indoor-parking time by ~60% using Raspberry Pi, YOLO and DeepSort for real time vehicle tracking.	
Senior Software Engineer Zeta, Directi – Bangalore, India	06/16 to 11/19
<ul style="list-style-type: none">End-to-end ownership of Zeta’s food ordering solution for POS devices and Raspberry Pi based self-serve Kiosks<ul style="list-style-type: none">Attributed to 1 million+ monthly transactions.Developed Spring boot based microservices for handling contactless payments(NFC & RFID) and QR code based Kiosk payments.Brought downtime to absolute 0 by building a completely offline payment experience for resilience against server outages.Ensured availability of detailed analytics using Firebase, BigQuery and DataStudio for traceability of offline scenarios.Contributed in setting up a streaming pipeline for Zeta’s rule engine allowing it to be continuously updated with new data using Kafka, Zookeeper, KSQL and PostgreSQL.Built the interface for Zeta’s rule engine using the Camunda DMN Decision Engine as part of the internal data science toolkit.Reduced the p99 latencies for NFC tag authorization in payment flow to sub-10ms using memcache and optimizing PostgreSQL queries.Setup multiple service health monitoring dashboards and automated-alerts for critical microservices serving ~1 million requests/day using Kibana, Graphana, ElasticSearch and Elastalert.Added support for scheduling customizable Redshift, PostgreSQL and Jasper reports in Zeta’s Spring Boot based reporting service.Developed a Google assistant bot for voice based food ordering using DialogFlow.	

Projects

Image Recognition As a Service, Cloud Computing Project, ASU	01/20 to 05/20
<ul style="list-style-type: none">Built a real-time object detector service using YOLO, AWS cloud and Raspberry Pi beating the baseline performance.Effectively utilized EC2, S3 and SQS for parallel processing of videos while controlling demand based auto-scaling of instances.	
Analysis of CGM time series data, Data Mining Project, ASU	01/20 to 05/20
<ul style="list-style-type: none">Worked on CGM time-series data analysis to extract features via various methods like statistical analysis, fourier & power transforms.Implemented multiple classification & supervised-clustering algorithms to achieve 70% accuracy improving over the baseline of 60%.	
Grain Measurement System, Inweon	08/15 to 05/17
<ul style="list-style-type: none">Achieved >99% accuracy in analyzing physical parameters of rice particles using linear regression and semantic segmentation algorithms.Currently deployed in 100+ rice mills across India with 1000+ readings taken on a daily basis.	
Flight Departure Delay Prediction, Major Thesis	01/16 to 05/16
<ul style="list-style-type: none">Experimented with Bayesian networks, Decision Trees & Logistic Regression for predicting the on-time arrival of flightsAchieved an accuracy of 90% with the J48 Decision Tree using a subset of BoT Flight Dataset with ~1 million records.	

Volunteering

Wikimedia Foundation	03/17 to Present
<ul style="list-style-type: none">Reduced vandalism in the pictures uploaded through the mobile app from 5.79% to 3.43% by restricting unwanted pictures like selfies, dark or blurred images, and duplicates using OpenCV and MobileNet.Received multiple project grants and travel scholarships to participate in annual conferences and hackathons.Mentored students during summers for Google Summer of Code, Outreachy and Google School since 2018.	

Certifications

• TensorFlow in Practice Specialization by DeepLearningAI	02/20
• Convolutional Neural Networks by DeepLearningAI	02/20
• Neural Networks and Deep Learning by DeepLearningAI	07/20

Notable Highlights

- Published 100+ of blog posts on [Windows App Tutorials](#), [Tutsplus](#), [ProAndroidDev](#) and [Towards Data Science](#).
- Zeta: Stellar performer award in first year and outstanding performer award for next two consecutive years.