

# AMIT BARAN ROY

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## EDUCATION

- M.S in Computer Science** **University of Colorado Boulder, USA** *Aug 2019 - May 2021*
- GPA - **3.81/4.00**, Data Science Specialization, Graduation - May 2021.
  - Courses - Machine Learning, Design & Analysis of Algorithms, Neural Networks & Deep Learning, Convex Optimization, Distributed Systems, Datacenter Scale Computing, Professional Master's Project, Big Data Architecture, Natural Language Processing.
- B.E in Electronics & Instrumentation** **BMSCE, Bangalore, India** *Sept 2012 - May 2016*
- GPA - **9.58/10.00**, Gold Medallist.
  - Courses - Operating Systems, Computer Networks, Embedded Systems, JAVA Programming, Digital Signal Processing.

## EXPERIENCE

- Teaching Assistant** **University of Colorado Boulder, USA** *June 2020 - July 2020*
- Supported the course and held office hours for CSCI-3022: *Intro to Data Science with Probability and Statistics* for a class of 50+ students.
- Software Developer Intern** **CenturyLink, USA** *May 2020 - May 2020*
- Accepted summer 2020 internship offer. Cancelled due to COVID-19.
- Software Engineer** **Mcfadyen Digital, Bangalore, India** *Aug 2016 - Jul 2019*
- Developed a payment framework using Oracle ATG to integrate country specific third party payment vendors for Louis Vuitton e-commerce that helped increase LVMH's revenue by a record breaking **15%** upto \$59 billion in 2019.
  - Improved efficiency, complexity and processing time of LV's order management system by redesigning the fulfillment pipeline framework to implement REST (previously SOAP) based integrations of retail & warehouse management services.
  - Increased security by implementing multithreaded transactions to synchronize concurrent order requests at cart and checkout.
  - Setup Oracle Weblogic application server 11g and deployed end to end ATG 11.2 Commerce Reference store along with Endeca search/Experience Manager for browsing products.
  - Facilitated smooth launch of LV Europe project and onsite UAT support during go-live month at Paris, France.
  - Automated manual order processing and reduced overall orders cancellation upto **20%** by optimizing existing back order architecture that significantly helped the production support and business team.
  - Enhanced online shopping user experience by developing a responsive address search feature using Google Maps API.
  - Helped the company to win a competitive marketplace project deal (2018) by developing an efficient REST based connector between ATG commerce and Mirakl marketplace platform as a POC.
  - Technology:** Java, J2EE, REST, SOAP, client-server, Oracle ATG (alternative Spring MVC), Endeca search (alternative ElasticSearch), Oracle SQL, Junit, Mockito, Jboss, Linux, Html, CSS, Javascript.

## TECHNICAL SKILLS

Python, Numpy, Pandas, Scikit Learn, Tensorflow, Keras, Java, J2EE, SOAP, REST, C, C++, JavaScript, jQuery, HTML, CSS, Flask, AngularJS, AJAX, Bootstrap, JUnit, MySQL, Redis, Hadoop, PySpark, RabbitMQ, Jboss, Git, Linux, Bitbucket, Maven, CI/CD, Jenkins, JIRA, GCP, Google Kubernetes Engine, Docker, Waterfall, Agile, Machine Learning, NLP, Computer Vision, Cloud Computing

## PROJECTS

- Covid-19 detection using CT-scan** | *Python, Tensorflow, Deep Learning, CUDA* *Dec 2020 - Dec 2020*
- Built a hybrid deep learning model using DenseNet and Nu-SVM to detect Covid-19 using CT-scans and achieved an accuracy of **89.5%** and **94.5%** AUC. It performed better as compared to other models like ResNet, Inception and MobileNet.
- Cloud Based Movie Recommender System** | *Machine Learning, Docker, Kubernetes, REST, Redis, GCP* *Sept 2020 - Dec 2020*
- Implemented Collaborative filtering based recommendation algorithm. Developed the application interface using Streamlit.
  - Scaled up the application to **9** pods by deploying it on Google Kubernetes cluster using docker containers. Enhanced performance by distributing server traffic using GKE load balancer service.
- SOAM Word Embeddings** | *NLP, Tensorflow, NLTK, Sklearn* *May 2020 - May 2020*
- Created a skipgram based word embedding model using modified Word2Vec algorithm to generate optimized word embeddings.
- Occupancy Network based 3D Image Reconstruction** | *Python, Tensorflow, Deep Learning* *Feb 2020 - April 2020*
- Implemented Generative Adversarial Network using Convolution NN to reconstruct 3D image from a 2.5D image.
  - Deployed Occupancy Networks using ResNet blocks to increase the resolution of generated 3D images from **256<sup>3</sup>** to **512<sup>3</sup>**.
- Paraphrase Detection** | *NLP, Tensorflow, NLTK, Deep Learning* *Sept 2019 - Dec 2019*
- Analyzed performances of different ML models (Logistic Regression, Random Forests, Support Vector Machines, Naive Bayes, Boosting) to detect paraphrases in a document and achieved a maximum accuracy of **73%**.
  - Improved accuracy to **90.09%** by using neural network based BiMPM model with BERT embeddings.
- Statistical Outlier detection using LOCI** | *C, C++, Java, MATLAB, CUDA, Git* *Sept 2020 - May 2021*
- Outlier determination of local density of data points to filter out low density information in microscopy images using LOCI algorithm.
- P2P Resource Pool** | *Flask, REST, Redis, Google Cloud, Git* *Feb 2020 - April 2020*
- Implemented a P2P abstraction service to share resources like storage (files) based on master slave architecture.
  - Scaled up the distributed service to **5** nodes to handle task distribution, file replication and node leave/failures.

## AWARDS

- Excellence Award (2017)**, Mcfadyen Digital. *Bangalore, India*
- Best Student Section - Outstanding Project Award (2016)**, ISA District 14. *Mumbai, India*