

Ambuj Arora

Machine Learning | Deep Learning | Data Science | Computer Vision | NLP

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PROFESSIONAL EXPERIENCE

Intel Corporation | Chandler, AZ | May 2020 – Aug 2020
Deep Learning Engineer

- Optimized Facebook's [RetinaNet model with 2.1x improvement](#) over native TensorFlow version using parallel programming in both C++ and Python
- Worked on [improving training performance of Google's TensorFlow](#) for Intel scalable CPUs using MKL library on models like ResNet50, RetinaNet, MaskRCNN, Transformer and BERT-Large

Algoscale Technologies, Inc. | Noida, India | July 2017 – July 2019
Data Scientist

- Developed an [Auto-Deep Learning pipeline](#) that allowed non-technical users to train machine learning models using Keras (Python) with features such as memory management, result storage, and remote access
- Built an [automated Cryptocurrency Trading Bot](#) on Bittrex exchange with a 10% profit on each transaction based on historical features and financial indicators using XGBoost in Python

Indian Institute of Technology | Delhi, India | Jan 2017 – June 2017
Machine Learning Researcher

- Collaborated with AIIMS, Delhi, India to develop a mobile platform for [Diagnosis of Cervical Cancer](#) by classifying cervical images using ResNet18 into severely infected, infected and normal, in Keras, helping around 60% cervical cancer patients in Orissa, India

TECHNICAL SKILLS

- Programming Languages:** Python, C, C++, HTML, CSS
- Machine Learning:** PyTorch, TensorFlow, Keras, Scikit-Learn, Pandas, Seaborn, NumPy, Matplotlib, SpaCy, NLTK, Data Analysis, Predictive Modeling
- Miscellaneous:** SQL, PostgreSQL, MongoDB, Flask, Git, Docker, AWS, Jenkins, Data visualization, Probability/Statistics

ACTIVITIES

University of Utah | Salt Lake City, UT | Aug 2019 – Present
Graduate Teaching Assistant for Senior Capstone Project

- Guiding 23 teams, of 4 students each, in the codebase of their capstone projects

EDUCATION

MS in Computer Science (Data Management and Analysis)
University of Utah | Aug 2019 – May 2021

B.Tech. in Electronics and Communications Engineering
Guru Gobind Singh Indraprastha University | Aug 2013 - May 2017

PROJECTS

Automatic Detection of Covid-19 from Ultrasound Image Data | Oct 2020 – Dec 2020 | [GitHub](#)

- Used Convolution Neural Networks (CNNs) to accurately classify ultrasound lung images into healthy, pneumonia infected or Covid-19 infected, in PyTorch, by trying different architectures like ResNet (84% accuracy) and VGG16 (87% accuracy)

Comparison of Regression Techniques using Bitcoin Price Data | Feb 2020 – Mar 2020 | [GitHub](#)

- Predicted bitcoin prices on OHLC (Open-high-low-close) data from Jan 2013 to Feb 2020 using 6 different regression models with offline and online training approaches
- Found XGB regressor to outperform all other models in the online setting, with over 90% improvement in RMSE

Using Reservoir Computing for Random Projections | Oct 2019 - Dec 2019 | [GitHub](#)

- Made non-linear data linearly separable in a higher dimension using Crosstalk between two current carrying wires as a reservoir

Coreference Resolution System | Oct 2019 - Dec 2019 | [GitHub](#)

- Implemented coreference resolution (57% F-score) by using string matching for words and noun phrases, word embedding similarity and Hobb's algorithm for making clusters for pronouns and noun phrases separately

Air Pollution Visualization in The United States | Oct 2019 - Dec 2019 | [GitHub Website](#)

- Developed an interactive website for demonstrating pollution trends in the US, which allows the user to visualize trends in various air pollutants

Tom and Spike Classifier – TensorFlow Object Detection on Images/Videos | Apr 2018 - May 2018 | [GitHub](#) [Medium Blog](#)

- Conducted a hands-on session ([YouTube lecture](#)) on '[Object Detection on Custom Images, using TensorFlow](#),' for 40 attendees
- Demonstrated object detection in any image/video by making a Tom and Spike Classifier from the Tom and Jerry Show