

Ashish Sinha

Education

2016–2020 **Indian Institute of Technology Roorkee**,
Metallurgical and Materials Engineering, Bachelor of Technology.
GPA – 8.018/10

Experience

Aug 2018– **Data Scientist Intern**, RYELORE.AI.

- Ongoing
- Implemented various image segmentation models like U-Net, SegNet, etc.
- Currently working on satellite imagery.
- Created tests and automation scripts.

May **Data Science Intern**, ANTRIEX IT SERVICES.

- 2018–July
2018
- Developed various Trading strategies involving Bollinger Bands and other technical trade indicators with the help of TA-Lib library.
 - Implemented research papers based on FINANCE AND QUANT TRADING.
 - Wrote a MLP CLASSIFIER to generate trade signals that increased the accuracy by 1.02%.
 - Implemented LSTM for stock price prediction.

Projects

Jan 2019– **Weakly Supervised Semantic Segmentation using Adversarial Erasing**, Prof. Jose Dolz, Ecole de
Ongoing *Technologie Superieure, Canada.*

- Implemented Weakly Supervised Semantic Segmentation papers using PASCAL VOC 2012 dataset.
- Working on solving biomedical health problems with MRI and CT images.
- Paper in review at The IEEE International Symposium on Biomedical Imaging (ISBI).

May 2018– **Metal Morphology Classification using Deep Learning**, Prof. K.S. Suresh, IIT Roorkee.

- Nov 2018
- Collected Iron and Titanium metal microstructures images.
 - Implemented a model with attention for classification of images into respective classes of microstructure.
 - Used the weights from various Convolutional layers of VGG16 model for t-SNE plots.

Aug 2018 **Neural Arithmetic Logic Units [Code]**, *Self-motivated.*

- Implemented the paper *Neural Arithmetic Logic Units* by Trask et. al. in Keras.
- The code does *arithmetic operations* only, for now.

Aug 2018– **MURA (musculoskeletal radiographs) X-Ray Classification [Code]**, *Self-motivated.*

- Oct 2018
- Implemented the original paper to reproduce the results.
 - Optimized the hyperparameters to beat the baseline score.
 - Used pretrained models like DenseNet50, ResNet169 among others with attention for classification.

Oct 2018 **Dynamic Memory Networks Plus [Code]**, *Self-motivated.*

- Implemented the paper *Dynamic Memory Networks for Visual and Textual Question Answering* in PyTorch.
- Model trained on BaBI dataset.

May 2018– **Simplifying Rough Sketches Using Deep Learning [Code]**, *Self-motivated.*

- Aug 2018
- Implemented the paper *Learning to Simplify: Fully Convolutional Networks for Rough Sketch Cleanup* by Simo-Serra et. al in PyTorch.
 - Implemented an Encoder-Decoder architecture.

Nov 2018 **Quora Insincere Question Classification**, *Self-motivated.*

- Implemented a CNN-LSTM architecture with attention to detect toxic content in online media.
- Achieved an F1-Score of 0.73.

Achievements

- July 2018 **Humpback Whale Identification Challenge**, *Kaggle*.
◦ Ranked 64 among 528 teams(TOP 13%) in the Whale Identification Challenge.
◦ Used Transfer Learning with ResNet50.
- Oct 2018 **TGS Salt Identification Challenge**, *Kaggle*.
◦ Ranked 589 among 2754 teams(TOP 22%) in the task to segment salt deposits beneath Earth's surface.
◦ Used UNet with ResNet50 as encoder.
- Aug 2018 **Home Credit Default Risk**, *Kaggle*.
◦ Ranked 1685 among 7198 teams(TOP 24%) in the Home Credit Default Risk Challenge.
◦ Used LightGBM and XGBoost with weighted ensemble.
- Nov 2018 **Human Protein Atlas Image Classification**, *Kaggle*.
◦ Ranked in the TOP 17%(now) in the multiclass multilabel protein classification challenge.
◦ Used ResNet50 as base model.
- Oct 2018 **Quick Draw! Doodle Recognition Challenge**, *Kaggle*.
◦ Ranked in the TOP 29% in the Doodle Recognition Challenge.
◦ Trained an ImageNet model from scratch, by constructing images from stokes.

Skills

Languages	Python(A), C/C++(B), SQL(B)
Frameworks	Keras, PyTorch, Tensorflow
WebD	HTML/CSS, JavaScript, Jekyll
Utilities	Anaconda, Git, Sublime Text, Jupyter Notebook
Communication	English(SRW), Hindi(SRW), Japanese(SO)

Relevant Courses

Online	Convolutional Neural Networks for Visual Recognition, Deep Learning for NLP, Deep Learning.Ai Specialization, Introduction to Machine Learning, Introduction to Statistics and Probability
Classroom	Linear Algebra, Differential Calculus, Differential Equations, Economics, Marketing Research, Environmental Economics

Extra Curriculars

- Apr 2018 **Vision and Language Group**, *Executive Member*.
The group aims to foster Deep Learning research among students by conducting discussions and implementations on various Research Papers in the field of Computer Vision and NLP. I implemented a paper on DC-GAN and Neural Style Transfer.
- Oct 2017 **Enactus IIT Roorkee Chapter**, *Executive Member*.
The Campus group works towards Socail Entrepreneurship. I was a part of the Kaagaz Project.
- Jan 2018 **Academic Reinforcement Program**, *Teaching Assistant*.
Taught General Chemistry(CYN-006) to a batch of 86 students.
- Jul 2018 **Academic Reinforcement Program**, *Teaching Assistant*.
Taught Intro to Computer Programming in C++(MTN-103) to a batch of 80 students.
- Feb 2018 **Sangram IIT Roorkee**, *Web Developer*.
Developed the website for Sangram, IIT Roorkee, the official annual Sports fest of IIT Roorkee.
- Dec 2015 **Quizense**, *Founder*.
Started a start-up along with 3 others that aimed to conduct Quizzes for various schools and fests.

References

K.S Suresh,
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CEO,
Ryelore AI,
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