

Bharath Chowdhary Nagam

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CURRENT RESEARCH

PhD Topic: Searching for extremely rare objects in the Universe.

Description: To research and develop novel image classification algorithm to find strong gravitational lenses from KiDS and Euclid (upcoming) data.

EMPLOYMENT

PhD student

Rijks Universiteit Groningen,
Data Science and Systems Complexity,
Dec 2020 - current

EXPERIENCE

ASML, The Netherlands

Design Engineer, Metrology Department
Jan 2018 - Dec 2020

Master Thesis- Constraining Orbital Parameters of J1407b

Leiden University, The Netherlands
Dec 2016 - Aug 2017

Internship - Optimal Energy solution for earth bound and interplanetary trajectories

University of La Rioja, Spain
July 2016- Sep 2016

EDUCATION

TU Delft, Delft, The Netherlands

Master of Science (M.Sc), Aerospace Engineering(Space Exploration)
2015- July, 2017

CGPA: 8.00/10.00

CIT, TN, India

Bachelor of Engineering, (Mechanical Engineering)
2011-May, 2015

CGPA: 9.0/10.0

TECHNICAL SKILLS

Languages : Python (4+ years) , Matlab (5+ years).

Tools/Libraries : Numpy, Astropy, Scikit-Learn, PyTorch, TensorFlow(Python), Keras, OpenCV.

Familiar : C, C++, Git, SVN.

Experience in ML/AI

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• [2020] Solving the problem of classifying unbalanced dataset using CNN

• [2021] Rank ordering the images based on information content in images with CNN regression

- [2022] Implementing semantic segmentation for finding gravitational lenses with **Fully Convolutional DenseNet**.

Past Experience in Astronomy

- Removal of stellar noise in RV signal using Gaussian Process
- Created a sample project using **Generative Adversarial Networks (GAN)** along with CNN to detect exoplanet in Direct Imaging data
- Characterization of J1407b (exoplanet with giant ring system) using Transit, RV and Direct Imaging data

CERTIFICATION .

- **Machine Learning** by Stanford University on *Coursera*

- **Neural Networks and Deep Learning** on *Coursera*
(*Logistic Regression with Deep Learning, Deep Neural Nets*)

- **Hyper Parameter tuning, Regularization and Optimization** on *Coursera*

- **Convolutional Neural Networks** on *Coursera*
(*Deep Convolutions, Residual Networks, YOLO, Face Recognition*)

- **Sequence Models** on *Coursera*
(*RNN , LSTM, GRU, Machine Translation*)

- **TensorFlow in practice specialization** on *Coursera*

FAMILIAR TOPICS

- Computer Vision
- Semi-supervised learning
- Clustering
- Linear and Logistic Regression
- Support Vector Machines
- Anomaly Detection
- Deep Neural Networks
- Bias and Variance Regularisation
- Natural Language Processing

HOBBIES

- **Star Gazing**
- **Playing Tennis**