

Viraat Reddy Aryabumi

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EDUCATION	University of Edinburgh	08/2017 - present
	MSc., Artificial Intelligence	
	Stanford University Summer Session	06/2016 - 08/2016
	Intensive in Technology & Entrepreneurship	Academic grade: A
	Osmania University, Chaitanya Bharathi Institute of Technology	09/2012 - 05/2016
	Bachelor's of Engineering, Information Technology	Academic GPA: 4.0 (Converted from 80.2%)
EXPERIENCE	Coordinator Research Catalogue Technology Transfer Office, IIIT-H Foundation	03/2017 - 08/2017
	<ul style="list-style-type: none">Exposed to a wide variety of (published and work-in-progress) Artificial Intelligence and Machine learning research literature at International Institute of Information Technology, Hyderabad (IIIT-H). My role involved understanding existing AI/ML research literature and evaluating potential commercial impact.	
	<ul style="list-style-type: none">Interacted with faculty of 6 research centers to understand potentially relevant technology to compile a research catalogue to facilitate technology transfer from academia to industry.	
	<ul style="list-style-type: none">Participant in the pilot of the 'Entrepreneur-in-residence' program. Performed market validation of 'Indic OCR' technology developed at IIIT-H.	
	Guest Researcher CSIR - Institute for Genomics & Integrative Biology	1/2017 - 03/2017
	<ul style="list-style-type: none">Worked with Dr.Vinod Scaria to explore how to build a classifier to classify Acute Myeloid Leukemia Cancer patients using genetic markers based on their prognosis.	
	Remote Software Engineering Intern BYOR	9/2016 - 12/2016
	<ul style="list-style-type: none">BYOR is an AI-powered resume helper based on hiring managers' feedback.Worked on improving skill suggestion engine resulting in improvement of quality of phrases returned.	
	Assistant Product Engineer Social Entrepreneurship Lab, Stanford University	7/2014 - 9/2014
	<ul style="list-style-type: none">Developed a low-cost, compact demonstration kit for the drip irrigation company Driptech.Development involved multiple design thinking cycles from need-finding to prototyping.Instrumental in innovating the design for the final demo kit that was put into production.	
RELEVANT COURSES	Graduate: Machine Learning & Pattern Recognition, Machine Learning Practical, Computational Cognitive Neuroscience, Human-computer interaction, Reinforcement Learning, Algorithmic Game Theory, The Human Factor, Decision Making in Robots and Autonomous Agents	
	Summer Session: Data Mining, Leading Trends in IT, Psychology of Technology, Sustainability Design Thinking	
	Undergraduate: Data Structures, Discrete Mathematics, Probability & Random Processes, Software Engineering, Databases (DBMS), Operating Systems, AI, Design & Analysis of Algorithms, Distributed Systems	
	Online: Self Driving Car Engineer Nanodegree* (Udacity), Machine Learning (Coursera), Learning how to learn (Coursera), fast.ai*	
RESEARCH	Thesis: Investigating Fair Classification*	5/2018 - present
	<ul style="list-style-type: none">Proposal to use Adversarially learned fair representation to prevent a system from predicting gender from face images while still being able to perform face recognition	
	Review: Learning to play video games using Deep Reinforcement Learning[†]	11/2017 - 1/2018
	<ul style="list-style-type: none">A review of recent advancements in the field of Deep Reinforcement Learning applied to video games.Focused on reviewing progress in arcade games, specifically in the ATARI Learning Environment.	
	Review: Model Based Reasoning becomes Automatic in humans with training[†]	10/2017 - 12/2017
	<ul style="list-style-type: none">A review of decision making models under cognitive neuroscience highlighting the relationship between model-based and model-free learning in the human brain.Focused on effects of training on distraction during performance of resource intensive tasks.	
PROJECTS	Hindsight Experience Replay Informatics, University of Edinburgh	5/2018 - 5/2018
	<ul style="list-style-type: none">Implemented Hindsight Experience Replay and a bit flipping environment in PyTorch	
	Learning to play Super Mario* Informatics, University of Edinburgh	5/2018 - present
	<ul style="list-style-type: none">Train an agent to play Super Mario Bros. in OpenAI Gym using deep reinforcement learning methods.Compare and contrast methods like DQN, and Dueling DDQN.	
	Traffic Sign Image Classification Self Driving Nanodegree, Udacity	12/2017 - 1/2018
	<ul style="list-style-type: none">Classify traffic sign images using LeNet5 architecture. Focused on augmenting data to improve accuracy.Achieved a final test accuracy of 91.75%.	

* currently pursuing

[†] unpublished

- Handwritten Digit Classification** | Informatics, University of Edinburgh 11/2017 - 12/2017
- Classify images of handwritten digits from the EMNIST dataset using Convolutional Neural Networks.
 - Experimented with various hyperparameter settings resulting in an accuracy of 87%.
- Identification of Lane Lines** | Self Driving Nanodegree, Udacity 7/2017 - 8/2017
- Identify white lane lines in a video from a car. Achieved by extracting features using image processing techniques.
- Predict document relevance to search query** | Stanford Summer Session 7/2016 - 8/2016
- Predict the relevance of a document given a particular search query. Framed the problem as a binary classification.
 - Visualized data, tested various different algorithms, and combined existing attributes to create new features.
- Data Lineage** | JP Morgan Chase UOP/Dept. of IT, CBIT 2/2016 - 6/2016
- Developed a proof-of-concept system to visualize the life cycle of data within an organization given a SQL query.
- Identification of Crop Diseases** | Dept. of IT, CBIT 7/2015 - 4/2016
- Identify crop diseases by extracting features from photos of leaves of the diseased crop.
 - Worked on the project from data collection to disease identification.
 - Implemented an SVM classifier; Achieved accuracy of 80% for classifying two types of leaf diseases.
- Smart Home Automation using Arduino** | Dept. of IT, CBIT 1/2015 - 4/2015
- Used the Arduino Platform to develop a smart home automation system which learns from User behaviour using a decision tree algorithm.
 - Selected for Student Innovator Award 2015 by ICTACT.

COMPUTER SKILLS

Languages: Python, MATLAB, L^AT_EX
Frameworks/Packages: PyTorch, Numpy, scipy, matplotlib, Tensorflow, Keras
Listed in order of familiarity

ACTIVITIES

- Won 2nd place at **UnBias Hackathon 2018**
- Core team member of **Skynet today**: a website providing informed coverage of AI hype
- Member of **Edinburgh University Formula Student Autonomous** team
- Represented the University of Edinburgh in **British Universities & Colleges Sport Golf**
- Participated in the 2016 Stanford **Silicon Valley Innovation Academy** program
- Grades 3, 2, 1 **Western Classical Piano** from Royal School of Music, London
- **Landscape photography** (fb.com/varphotography)
- Ranked number 3 in 'B' Category at **Junior Golf** in India South Zone (2009)
- Participated in **JPMC Code-for-good 2015** in Bangalore.

SOCIAL WORK

- The Orange Leaf** | EB Member and Head of Design 2015
- The Orange Leaf is a student organisation working for social causes that concern today's world - environment, education and animal welfare.
- M Venkatarangaiya Foundation** | Case Study Volunteer
- MVF is a non-profit working on protecting the rights of every child and ensuring all of children attend full-time formal education. Presented a case study on 'Volunteers and Students at MVF'
- Student Think Tank for India** | Design Thinking mentor
- Student Think Tank for India aims to build a capacity from within schools and colleges to promote critical thinking and civic engagement. Mentored and organized a workshop on design thinking for school children.
 - **Girls Code Camp** | Hackday Mentor
- Girls Code Camp Mentored is an initiative to help women take charge of their lives and their communities by providing them with computer science skills and resources. Mentored 50 girl students as part of GCC Hackday 2015