Viraat Reddy Aryabumi

+91 9032489699/+44 7957669163 s1791387@ed.ac.uk
linkedin.com/in/viraataryabumi github.com/viraat
9D, Holyrood Road, Edinburgh, UK, EH88FQ viraataryabumi.info

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
• 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.
• 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.
• 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
• 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
• 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
• 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.

RESEARCH

Thesis: Investigating Fair Classification* 1/2018 - 3/2018
• 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
• 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
• 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
• Implemented Hinsight Experience Replay and a bit flipping environment in PyTorch

Learning to play Super Mario* | Informatics, University of Edinburgh 5/2018 - present
• 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
• Classify traffic sign images using LeNet5 architecture. Focused on augmenting data to improve accuracy.
• Achieved a final test accuracy of 91.75%.

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.

† unpublished * currently pursuing

• 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, LaTeX
Frameworks/Packages: PyTorch, Numpy, scipy, matplotlib, Tensorflow, Keras
Listed in order of familiarity

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*

ACTIVITIES

• Core team member of **Skynet today**: a website providing informed coverage of AI hype
• Member of **Edinburgh University Formula Student Autonomous'** path planning 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
• Official **photographer** for Carpe Diem (CBIT's cultural fest)
• **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** |Served as an EB member and Head of Design for 2015
• **M Venkatarangaiya Foundation** |Case study on 'Volunteers and Students at MVF'
• **Student Think Tank Initiative, India** |Design thinking mentor. Organized a workshop for 20 school children
• **Girls Code Camp** |Mentored 50 girl students as part of GCC Hackday 2015

* currently pursuing