Ananth Shreekumar

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EDUCATION

Integrated Master of Technology in Computer Science — Aug 2016 - Present

International Institute of Information Technology - Bangalore (IIIT-B)

- 8th Semester Student, CGPA : **3.9 / 4.0** [transcript]
- 5 year program, Expected Graduation : **July, 2021**

EXPERIENCE

Research Intern - Open Set Recognition Methods for Microscopic Urinalysis — Jan 2019 - Jul 2019

Computational Sciences Laboratory - IIIT-B — Prof. G N Srinivasa Prasanna

- Open Set Recognition methods that accurately classify in-class (positive) samples and reject out-of-class samples.
- Implementation of the existing technique OpenMax as an application on this dataset.
- Created a novel approach that increased rejection accuracy by 10% while maintaining positive class accuracy at 85%.
- Work included in a paper that was accepted at the **Medical Imaging meets NeurIPS 2019 workshop, 33rd Conference on NeurIPS**.

Teaching Assistant — Aug 2019 - Dec 2019

Mathematics for Machine Learning - IIIT-B

- Responsibilities included handling tutorial classes, problem solving sessions and exam paper evaluation.

PUBLICATIONS

- Tarun Dutt, G.N.S. Prasanna, T.R. Dastidar, and Ananth Shreekumar. *Towards Artifact Rejection in Microscopic Urinalysis*. Medical Imaging meets NeurIPS 2019 workshop, 33rd Conference on Neural Information Processing Systems. [pdf]
- Ananth Shreekumar*, Biswesh Mohapatra*, and Srisha Rao. *Incorporating Autonomous Bargaining Capabilities into E-Commerce Systems*. 20th ACM International Conference on Intelligent Virtual Agents. [Accepted]

PROJECTS

E-Commerce Bargaining Agent — Aug 2019 - Jul 2020

7th Semester - Artificial Intelligence Course — Prof. Shrisha Rao

- Implementation of an E-Commerce Agent that will ultimately have the ability to bargain with a user by offering discounts and recommending product bundles, while also being able to evaluate counter-offers made by the user.
- Evaluate offers using the Thomas-Kilmann Conflict Mode instrument and propose counter-offers using the BOA Model.
- Work accepted as a full paper at the **20th ACM International Conference on Intelligent Virtual Agents (IVA'20)**.

Mapper - Topological Data Analysis — Mar 2020 - Apr 2020

8th Semester - Computational Topology course — Prof. Amit Chattopadhyay

- Implemented the Mapper algorithm from Topological Data Analysis.
- Involves dimensionality-reduction that requires implementing a variable number of loops, which is solved by recursion.

code

A Column Store database — Apr 2020 - May 2020

8th Semester - Data Modeling course — Prof. Chandrashekar Ramanathan

- Implemented a schema in XMLSchema for Relational Database schemas. This required working at a meta-meta-data level.
- Implemented Schema Extractor and Schema Loader classes, that parse an XML instance of the above XMLSchema and create required Tables, Views and add the appropriate Entity-Integrity Constraints and Referential Integrity Constraints.

code

Bangalore Metropolitan Transport Corporation - Cost Minimization — Jan 2018 - Mar 2018

Project Intern - IIIT-B — Prof. V N Muralidhara

- Optimization of the Bangalore Metropolitan Transport Corporation bus schedule to minimize their cost of operation.
- Cost was calculated using the salaries of various worker roles and time spent on duty.
- Constraints included a time table and the number of buses along a route.

Toxic Comments Classification Sep 2018 - Nov 2018

5th Semester - Machine Learning course Prof. G Srinivasaraghavan

- Multi-label machine learning classifier that can classify comments found online into multiple classes of vituperation.
- Training included various Machine Learning methods and their ensembles, and blending and stacking.

report

English to Japanese Transliteration Jan 2020

8th Semester - Natural Language Processing course Prof. G Srinivasaraghavan

- Convert Japanese written in English to Japanese written in ひらがな.
- Developed the algorithm for transliteration using the Unicode text standard.

code

Simple As Possible - 1 Computer Apr 2017

2nd Semester - Digital Design course Prof. Subajit Sen

- Built the Simple As Possible - 1 Computer in Verilog.

code

TECHNICAL SKILLS

Programming Languages : Python • C++ • C

Data Science : Pytorch • Scikit-Learn • Tensorflow • Keras • OpenAI-Gym

Tools : Git • Jenkins • Docker • GNUPlot • LaTeX

Others : SQL • XML • Linux • MS Excel

EXTRA-CURRICULARS

Global Leader Experience, Bangalore Dec, 2019

Conducted by Common Purpose

- Week-long program designed to build leadership and team working skills and to develop Cultural Intelligence.
- The theme: "How do you ensure that technological innovation provides economic as well as social value in cities?"
- Worked with students from **King's Business School, London** to provide a solution for a complex problem in Bangalore.

COURSE WORK

Theory and Systems : Data Structures and Algorithms • Automata Theory and Computability • Operating Systems • Database Systems • Programming Languages • Software Engineering

Data Science and AI : Machine Learning • Automatic Speech Recognition • Visual Recognition • Reinforcement Learning

Mathematics : Linear Algebra • Convex Optimization • Discrete Mathematics • Probability Theory

Others : Digital Design • Signals and Systems • Computer Architecture • Computer Networks

ACHIEVEMENTS

Selected for **Dean's Merit List** at IIIT-B for three consecutive years for academic excellence 2017 - 2019

Received **Merit Scholarship** at IIIT-B for three consecutive years 2017 - 2019

All India **IIT-JEE Main** Examination - 99.39 percentile 2016

Karnataka State **Common Entrance Test** - Rank 98 / approx. 120,000 candidates 2016

HOBBIES AND INTERESTS

日本語 (Japanese)

Learning Japanese using the Genki Textbooks and Anki App. Currently able to read and write ひらがな and カタカナ, learning 漢字.