

Aditya Bharti

SENIOR YEAR SOFTWARE ENGINEERING STUDENT

OBH - 89, IIIT Hyderabad, Gachibowli, Hyderabad, India - 500032

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Education

International Institute of Information Technology, Hyderabad

Hyderabad, India

B.TECH. AND MS BY RESEARCH IN COMPUTER SCIENCE AND ENGINEERING

August 2015 - April 2020 (Expected)

- CGPA - **9.32/10**
- Branch Topper

Work Experience

Google Summer of Code 2018

Hyderabad, India

STUDENT DEVELOPER

April 2018 - August 2018

- Working for Scipy under Python Software Foundation umbrella.
- Added a new module to handle 3D Rotations.
- Involved reading and implementing research papers on Spacecraft Guidance, Control and Dynamics.
- Implemented numerically robust algorithms for attitude determination and rotation spline interpolation.
- GSoC project description [here](#), code hosted on Github [here](#)

Computer Vision and Information Technology (CVIT) Lab

Hyderabad, India

UNDERGRADUATE RESEARCHER

May 2017 - Present

- Guided by Prof. C.V. Jawahar to work on the confluence of Machine Learning and Computer Vision.
- Currently working on Graph Convolution Networks (GCNs) which extends the classical CNN Deep Learning architecture to unstructured graph domains.
- Worked on content aware video retrieval using Deep Learning architectures.

Mozilla

Hyderabad, India

OPEN SOURCE CONTRIBUTOR

November 2017 - Present

- Extended python parsers for Telemetry (data collection) code.
- Implemented new C++ APIs for easier Telemetry collection.
- Added support for said APIs in JavaScript by working on Mozilla's SpiderMonkey Javascript engine.

SysTools Software

Pune, India

SOFTWARE ENGINEERING INTERN

July 2016

- Built a data analytics tool for internal cost and revenue tracking, with information being collated from Google App Engine, and Amazon S3.
- Performed Quality Assurance and Testing of SysTools' main computer forensics product, SysTools MailXaminer.

IIIT Hyderabad

Hyderabad, India

TEACHING ASSISTANT

August 2017 - May 2018

- Algorithms - offered to second year students. (August 2017 - November 2017)
- Digital Signals Analysis and Applications. (January 2018 - May 2018)
- Responsibilities include designing and correcting exams and assignments.

Research Projects

Content Aware Video Retrieval and Metadata Extraction

CVIT Lab, IIIT-H

RESEARCH PROJECT UNDER DR. C.V. JAWAHAR

May 2017 - Present

- Part of a three member research team.
- Used Deep Learning (DL) for real time celebrity identification in live news feeds.
- Experimented with multiple DL architectures such as YOLO, VGGNet, and TinyFaces.
- Final architecture consisted of an OpenFace pipeline and a Support Vector Machine (SVM).
- Extracted metadata such as co-occurrence statistics, frequency of occurrence, and time of occurrence.
- Built a query system on top of said meta data to visualize celebrity popularity.
- Applications included channel bias detection, temporal variation of popularity.
- Future work involved extending pipeline to recognize new faces in real time without supervision.

Course Projects

Sentiment Analysis of IMDb database

MACHINE LEARNING 1 PROJECT UNDER DR. VINEET GANDHI

November 2017

- Implemented Time Delayed Neural Network (TDNN) architecture for extracting word level features.
- Implemented Convolutional Neural Networks (CNNs) for extracting mixed word and character level features.

Ultimate Tic-Tac-Toe Bot

ARTIFICIAL INTELLIGENCE PROJECT UNDER DR. PRAVEEN PARUCHURI

February 2017

- Made an A.I. bot capable of playing a 16x16 variant of Ultimate Tic-Tac-Toe, which stood 28th in batch.
- Used alpha-beta pruning with minimax algorithm and MTDf search with heuristic function.

Brickbreaker

GRAPHICS PROJECT UNDER DR. AVINASH SHARMA

February 2017

- Developed a 2D game with C++ and OpenGL from scratch where baskets must be moved to collect falling bricks.
- Implemented rudimentary physics for the falling, reflection and collision detection.

Linux Shell

OPERATING SYSTEMS PROJECT UNDER DR. P. K. REDDY

September 2016

- A Bash like shell for Linux capable of creating and manage new processes, written in C.
- Had integrated support for background execution, piping, and redirection, along with certain custom commands.

Mini-Dropbox: P2P File Sharing System

COMPUTER NETWORKS PROJECT UNDER DR. MOUMITA PATRA

February 2017

- Python program to keep two separate directories synced, similar to Dropbox, using sockets.

Achievements

Dean's List Awards

AWARDED FOR ACADEMIC EXCELLENCE IN COLLEGE

- Monsoon 2015 (Top 5%)
- Spring 2017 (Top 15%)
- Spring 2016 (Top 5%)
- Monsoon 2017 (Top 15%)

National Talent Search Scholarship 2014

FOR SCHOLASTIC EXCELLENCE

- Recipient of scholarship reserved for top 1000 of over 1,000,000 national candidates.

Kishore Vaigyanik Pratsahan Yojana (KVPY) 2015

FOR SCHOLASTIC EXCELLENCE

- Receipt of scholarship reserved for top 900 out of over 100,000 national candidates.

Relevant Courses

- Machine Learning I
- Linear Algebra
- Artificial Intelligence
- Optimization Methods
- Data Structures and Algorithms
- Operating Systems
- Compilers*
- Computer Networks
- Software Design and Analysis
- Database Systems
- Computer Vision

Programming Skills

5000 lines Python, C/C++

Intermediate Javascript, MATLAB, Bash, SQL, PHP, \LaTeX , NodeJS, HTML, CSS

Tools Keras, PyTorch, scikit-learn, Git, Github, Mercurial

Positions of Responsibilities

Debate Club Coordinator '18 Organised a national debate event in college during annual fest.

Teaching Volunteer

Taught debate and judged Halla Bol, a Teach For India initiative to teach debating skills to underprivileged children.