

# Ashwin Pathak

## Curriculum Vitae

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### Education

- 2015-Present **B.Tech(Honours) in Computer Science and Engineering**, *International Institute of Information Technology*, Hyderabad, CGPA : **9.37**.
- 2013-2015 **Senior Secondary, CBSE**, *Vijayvergiya Bal Vidyalaya*, Kota, Percentage: **94.6%**.  
**Topper of the school.**
- 2013 **Secondary, CBSE**, *St. Joseph's Convent S.S. School*, Sagar, M.P.  
CGPA: **10**

### Experience

- May 2018- Present **Amazon Software Development Intern**, 2 MONTHS SOFTWARE DEVELOPMENT INTERN, Amazon Hyderabad India.  
Working on a new widget for **Amazon Business Homepage**.
- Jan 2018 - **Teaching Assistant**, COMPUTER GRAPHICS, IIT.
- April 2018 Worked under **Prof. Avinash Sharma** to conduct tutorial sessions for the second year undergraduate students.
- Feb 2017- **SciPy.diff**, OPEN SOURCE CONTRIBUTOR, Python Software Foundation.
- May 2017 A contributor to the open source organization of library scipy of python. Worked on the implementation of a **new module: scipy.diff**
- Aug 2017 - **Teaching Assistant**, DIGITAL LOGIC AND PROCESSORS, IIT.
- Dec 2017 Worked under **Prof. Madhava Krishna** to conduct lab and tutorial sessions for the first year undergraduate students.
- May 2017 - **Honours Research**, CENTER FOR VISUAL INFORMATION TECHNOLOGY, IIT.  
Present Working under **Prof. P.J. Narayanan (Director of the institute)** in the field of **Augmented Reality** on the topic: hand-held user perspective rendering and optimization.
- Aug 2016 - **Web Developer**, NE78 INDIA, T-Hub.
- Nov 2016 Worked in a team of 4 on a web application portal: GETrux based on PHP Laravel framework to add various gateways and enhance user interface.

### Projects

- **Parallax Tolerant Image Stitching**, COMPUTER VISION.  
An implementation of parallax tolerant image stitching algorithm. It involves **geometry, homography and optimizations**.
- **Optimizing Color Consistency in Photo Collections**, DIGITAL IMAGE PROCESSING.  
An implementation of the algorithm to propagate effects of changes in a collection of photos based on the similarity between the pictures.

- **Document Classification and Clustering**, STATISTICAL METHODS IN ARTIFICIAL INTELLIGENCE.  
Developed a generative model using Gaussian Mixture Models to classify and cluster the documents.
- **Hadoop Distributed File Systems**, DISTRIBUTED SYSTEMS.  
Made a simple hadoop distributed file system without map reduce to efficiently store and organize files in a distributed manner.
- **Ultimate Tic-Tac-Toe**, ARTIFICIAL INTELLIGENCE.  
An AI bot capable of playing 4\*4\*4\*4 Tic-Tac-Toe. It involves **heuristics, minimax, alpha-beta pruning, and iterative deepening algorithms**.
- **Linux Shell**, OPERATING SYSTEMS.  
Implemented a basic command line (bash like) Linux shell using **system-calls in C**.
- **Remote Method Invocation**, DISTRIBUTED SYSTEMS.  
Implemented a banking based client-server system using **RMI in java**. Capable of depositing and withdrawing money virtually.
- **Bloxorz**, COMPUTER GRAPHICS.  
Implemented a 3-D game using **OpenGL in C++** very similar to miniclip's games.

## Skill Set

OS	LINUX, WINDOWS, MACOS, ANDROID
Programming and Scripting	C, C++, PYTHON, JAVA, BASH, MATLAB, ASSEMBLY LANGUAGE, RUBY(BASIC)
Web	HTML, CSS, JAVASCRIPT, JQUERY(+AJAX)(BASIC), SPRING MVC, LARAVEL(BASIC), DJANGO, WEB2PY
Miscellaneous	MATLAB, SQLITE, NEO4J(BASIC), GIT, INTELLIJ, ANDROID STUDIO, VIM, OPENGL, UNITY GAME ENGINE, VUFORIA, MOCKITO, NOSETESTS

## Relevant Courses

- Database Systems, Statistical Methods in AI, Digital Image Processing, Distributed Systems, Computer Vision, Principle of Information Security, Computer Programming, Data Structures, Algorithms, Operating Systems, Artificial Intelligence, Computer Graphics, Computer Networks

## Achievements and Extra-Curricular

- o In **Dean's Merit List for Academic Excellence** (top 5% of the batch).
- o Became a **National Talent Search Examination(NTSE) scholar** in the year 2013 conducted by NCERT.
- o Maximum rating of 1419 in Codeforces. Handle : **ashp20**
- o All India Rank 1913 among 1.3 million in Joint Entrance Exam(Mains)
- o All India Rank 6050 among 0.1 million in Joint Entrance Exam(Advanced)