

Ashwin Pathak

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EDUCATION

Georgia Institute of Technology

Atlanta, GA

Master of Science in Computer Science with Machine Learning Specialization.

Aug. 2021 – Present

- CGPA : **4.0/4.0**. Advised by: **Dr. Diyi Yang**. Expected Graduation: **Spring 2023**

International Institute of Information Technology

Hyderabad, India

Bachelor of Technology in Computer Science (Honors in Computer Vision)

Aug. 2015 – Jul. 2019

- CGPA : **9.4/10.0 (Top 5% of the batch)**. Awarded Dean's Merit List for Academic Excellence

TECHNICAL SKILLS

Programming: C | C++ | Python | Java | JavaScript | NodeJS | ReactJS

Misc: React | AWS | DynamoDB | S3 | ECS | EC2 | NLB | Git | IntelliJ | Android Studio | PyTorch | Keras | Tensorflow

Courses: CV | NLP | ML | DSA | Graphics | OS | CN | DBMS | AI | Distributed Systems | Software Engineering

Languages: English(Fluent) | Hindi(Native)

PUBLICATIONS

AbuseAnalyzer: Abuse Detection, Severity and Target Prediction for Gab Posts

2020

International Conference on Computational Linguistics

- Worked with Mohit Chandra, Manish Gupta, Manish Shrivastava, Ponnurangam Kumaraguru. Created a **fine-grained abuse detection** method along with an **abuse analysis dataset** comprising of 7601 gab posts.
- Proposed a system for abuse analysis, obtaining an accuracy of 80% for **abuse presence**, 82% for **abuse target prediction**, and 65% for **abuse severity prediction**.

Idiomatcity Detection using Few-Shot Learning

2022

International Workshop on Semantic Evaluation

- Detected idioms using **zero-shot and few-shot learning** using **Siamese Networks with BERT based pre-trained multilingual models**
- Achieved F-1 score of 85% in the classification task.

EXPERIENCE

Amazon.com

Jul. 2019 – Aug. 2021

Software Development Engineer

Hyderabad, India

- Led, designed, developed and launched "Call-Off-Stock" project for **highly scaled, idempotent and concurrent** inventory tracking systems and its accounting. Worked on **AWS, CDK, Java Spring MVC and DynamoDB**.
- Launched "Invoice-By-Amazon" project as a **SME on accounting systems** for European marketplace flash-sale.
- Catered to Business customers' experience by **developing and enriching widgets** for Amazon Business homepage and navigation across **all marketplaces along with AWS** migration.
- Mentored SDEs, presented projects organization-wide and **won accolades** for accounting and tracking projects.

Social and Language Technologies Lab

Oct. 2021 – Present

Researcher

Georgia Tech, Atlanta, USA

- Working with Dr. Diyi Yang on **conversation summarization**.
- Employing self-supervision techniques to create structurally-aware and consistently robust summaries.

Institute for high performance computing and networking (ICAR-CNR)

May. 2019 – Jul. 2019

Research Intern

Calabria, Italy

- Worked remotely with Dr. Giuseppe Manco on **safety and security of deep neural networks**.
- Carried out intensive research on ways of fooling deep neural networks and how to mitigate them.
- Developed a **variational auto-encoders based semi-supervised learning** classifier for Nazism detection.

Precog Research Lab

Jan. 2019 – Apr. 2019

Research Assistant

Hyderabad, India

- Researched on Hate Speech Detection in code-mixed Data.

- Worked with Dr. Ponnurangam Kumaraguru on hindi-english code mixed tweets for **detection and analysis**.
- Harnessed **BERT, sub-word level semantics** with transfer learning. Demonstrated the results successfully.

Center for Visual Information Technology

May. 2017 – Jul. 2019

Honors Researcher on Augmented Reality

Hyderabad, India

- Researched with Dr. P.J. Narayanan (Director of the institute) on **hand-held user perspective rendering**.
- Optimized rendering using light-weighted deep neural networks on android mobiles, vuforia, unity3D and android.

Amazon.com

May. 2018 – Jul. 2018

Software Development Internship

Hyderabad, India

- Designed, developed and launched a new recommendations widget for **Amazon Business Homepage**.
- Implemented the **recommendations module for users based on their shopping preferences**.

International Institute of Information Technology

Aug. 2018 – Nov. 2018

Research Assistant

Hyderabad, India

- Worked with Dr. Ravi Kiran to render sketches from a user-defined viewpoint using **novel view synthesis**.
- Modeled a **transformation grounded image generation network** involving deep auto encoders and GANs.

PROJECTS

COS Inventory Authority and Ledger | *Java, NodeJS, AWS, CDK, ECS, DynamoDB* Aug. 2020 – Aug. 2021

- Designed a **multi-threaded** solution for tracking using **DynamoDB, S3, locks and state design pattern**.
- Implemented the ledger service for sellers using **AWS step functions** and idempotent service calls.
- Created infrastructure through code using **CDK and NodeJS**.

Visual Question Answering using CLIP | *Python, Pytorch, CLIP, VQA*

Jan. 2022 – Apr. 2022

- Zero-shot classification based model for Visual Question Answering using CLIP.

Situational Awareness for Covid-19 | *Python, Django, Causality Model*

Aug. 2021 – Dec. 2021

- Created a Covid-19 tracker and predictor dashboard using granger causality model and statistical ML.

Parallax Tolerant Image Stitching | *Python, OpenCV, Computer Vision*

Jan. 2018 – Apr. 2018

- Worked with Dr. Anoop Namboodiri on finding alignment terms corresponding to local stitching and then applying **Content Preserving Warping** for refining the results.
- Implemented **SIFT detectors with feature matching and RANSAC**.

Model Based Document Classification and Clustering | *Python, Numpy, Scipy*

Aug. 2017 – Nov. 2017

- Worked with Prof. Vineet Gandhi to develop a **generative model using GMMs** to cluster the documents.

LEADERSHIP POSITIONS

Georgia Institute of Technology

Aug. 2021 – Present

Teaching Assistant

Atlanta, GA

- Worked with Prof. Ritter Alan as a GTA for CS 4641 **Machine Learning** course.
- Working with Prof. Shashank Varma as a GTA for CS 3790 **Introduction to Cognitive Science** course.

AlgoUniversity and Newton School

Feb. 2021 – Aug. 2021

Instructor and Mentor

Hyderabad, India

- Instructor for data structures and algorithms with **AlgoUniversity**.
- Worked as a mentor at **NewtonSchool** to teach data structures and web development.

International Institute of Information Technology

Aug. 2017 – Apr. 2019

Teaching Assistant

Hyderabad, India

- Worked with Prof. Avinash Sharma as a TA for Computer **Graphics**. Worked with Prof. Ravi Kiran as a TA for **Digital Image Processing**. Worked with Prof. Madhav Krishna as a TA for **Digital Logic and Processors**.

Alumni cell and Felicity, IIITH

Jun. 2017 – Apr. 2019

Head Content Writer and Hospitality Coordinator

Hyderabad, India

- Worked as a **head content writer** for Alumni cell at IIITH.
- Worked as a hospitality coordinator for Felicity, a techno-cultural festival at IIITH.

AWARDS AND ACHIEVEMENTS

- **Trend Setter Award** at Amazon for peculiar and innovative display of work organization-wide.
- **Pat-on-the-back Award** at Amazon for effective delivery of results.
- **National Talent Search Examination (NTSE) scholar** in 2013 conducted by NCERT.
- Stood **4th in International Commerce Olympiad** nation wide at Bombay Stock Exchange.