# Ashwin Pathak

470-855-3250 | apathak60@gatech.edu | linkedin.com/in/ashwinpathak20/ | github.com/ashwinpathak20

## 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 | Kotlin
**Misc**: React | AWS | GraphQL | Kubernetes | Django | 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.**

**Idiomaticity 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

**Doordash** — May. 2022 – Present
*Software Engineer Intern* — *Atlanta, USA*
- Working on the **new verticals merchant experience** team to develop the functionality of search for self serve inventory management for non-retail merchants.
- Working on **AWS, Terraform, Kotlin, Redis, React and GraphQL.**

**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 ledger service for sellers using **AWS step functions, CDK, NodeJS** and idempotent service calls.

**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.

**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 Tech and IIIT-H**                                                 Aug. 2017 – May 2022
*Teaching Assistant*                                                             *Atlanta, Hyderabad*
- Worked with Prof. Ritter Alan as a GTA for CS 4641 **Machine Learning course.** Worked with Prof. Shashank Varma as a GTA for CS 3790 **Introduction to Cognitive Science course.**
- 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.**

**AlgoUniversity and Newton School**                                       Feb. 2021 – Aug. 2021
*Instructor and Mentor*                                                           *Hyderabad, India*
- Instructor for data structures, algorithms and web development with **AlgoUniversity and NewtonSchool**.

**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.