Ankit Kr. **Singh**

Major : Computer Science · **Minor** : Mathematics

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Education

Degree/Certificate	Institute/Board	CPI/Percentage	Year
M.S. (Machine Learning)	Georgia Institute of Technology, Atlanta	3.6/4.0	2021-23
B.Tech	Indian Institute of Technology, Guwahati	9.09/10	2015-19
Senior secondary	CBSE board	93.4%	2014
Secondary	CBSE board	10.0	2012

Experience

Microsoft R&D India (STCI)
Hyderabad, India

Software Developer Engineer — *June'19-Present*

- Implemented support for files search queries for multiple query patterns.
- Implemented and experimented with different relevance and ranking model.
- As an impact added 1M MAU to service and improved quality (click rate) by ∼ 30%.
- Designed and developed Cortana skill to power file search experience for Cortana In Windows and Teams App.

Microsoft R&D India (Azure)
Hyderabad, India

Software Developer Intern — *May-July 2018*

- Designed and developed an IoT based solution for Agriculture related problems.
- Built various Micro-services and used Azure IoT suite and other services.
- Used docker containers for deployment over Azure cloud.

Indian Institute of Technology, Guwahati
Guwahati, India

Research Intern — *May-June 2017*

- Designed and developed Graph2Vec algorithm using mikolov et al. Word2Vec model.
- Compared the developed method with other existing graph similarity measures.
- Analyzed protein structures based on the Graph2Vec cosine similarity.

Projects

Abductive Reasoning to Interpret EEG Dataset

Dr. Rashmi Baruah, Assistant Professor, Dept. of CSE, IIT Guwahati — *Mar-Jun 2019*

- Used Abductive Reasoning model to interpret the EEG time series data for Epileptic Seizure Onset detection.
- Implemented framework and different hypothesis grammar for extracting explanations for classification.

Answer selection using Text-GCN and attention mechanism

Dr. Ashish Anand, Associate Professor, Dept. of CSE, IIT Guwahati — *Feb-Apr 2019*

- Designed an architecture using Graph Convolutional Network for Answer selection task.
- Implemented above framework using TensorFlow and attained and performance improvement of 2%(accuracy).

Perturbative Neural Network

Dr. Arijit Sur, Associate Professor, Dept. of CSE, IIT Guwahati — *Aug-Nov 2018*

- Implemented PNN architecture using TensorFlow and proposed tweaks to improve model performance.
- Deployed the model for Image Classification Task on CIFAR dataset.

Parallel Accelerated Gradient Descent

Dr. Gaurav Trivedi, Associate Professor, Dept. of EEE, IIT Guwahati — *Mar-Apr 2019*

- Implemented serial and parallel version of GD, Heavy Ball, Nesterov and FISTA algorithm using CUDA framework.
- Analyzed the parallel code performance w.r.t. the serial implementation.

Technothlon App

PlayStore Link : goo.gl/BfaHjj — *Dec 2016*

- Made a scalable multi-platform app using Cordova for Technothlon (All India competition taken by around 70000 students annually).
- Included features viz. Infinite Scroll, Dynamic Notifications etc.

Smart Health monitoring System

Dr. S.B. Nair, Professor, Dept. of CSE, IIT Guwahati — *Nov 2017*

- Built a smart health monitoring system using Arduino(MCU) and related sensors.
- Used django based central server hosted on Raspberry-Pi(MPU) with wifi adapter and Xbee for communication.

Technical Skills

- **Programming languages** : C, C++, Python, Java, C#, Prolog
- **Web and App frameworks** : Django , MEAN Stack, Cordova , Android programming
- **Web technologies** : PHP, HTML, CSS, JavaScript, jQuery, Bootstrap
- **Database management** : SQL, Cassandra, Neo4J, mongoDB
- **Miscellaneous** : IoT , OpenCV, Git, Tensorflow, Azure Suite
- **Operating system** : Windows, Linux

Achievements

2017 **Rank 82**, GS Quantify 2017

2018 **Rank 52/2500**, Analyze This, American Express

2015 **Among top 0.3% of all students (1.3 million+)** , Joint Entrance Examination 2015

2014 **National Rank 18** , National Level Science Talent Search Examination

2013 **National Rank 316 and State Rank 21**, National Science Olympiad

Key Courses Taken

Masters

- Advanced Operating Systems.
- Reinforcement Learning
- Artificial Intelligence
- High Performance Computing
- Machine Learning for Trading

Computer Science

- Data structures and Algorithms (with lab).
- Operating Systems(with Lab)
- Parallel Computing
- Databases(with Lab)
- Compilers(with Lab)
- Randomized Algorithm
- Software Engineering (with lab).

Mathematics

- Probability, Random Processes & Statistics
- Modern Algebra
- Real and Complex Analysis
- Optimization
- Economics and Game Theory
- Differential Geometry
- Scientific Computing

Machine Learning and AI

- Advanced Artificial Intelligence
- Computer Vision & Machine Learning
- Intelligent System & Interfaces
- Pattern Recognition and Machine Learning

Positions Of Responsiblity

2017-18 **App Development Head**, Coding Club, IIT Guwahati.

2016-17 **Web Master**, Reflux'17, The Annual Chemical Engineering Symposium of IIT Guwahati.

2015-16 **Core team member and City representative** , (Shaktinagar), Technothlon 2016