# SUNNY ANAND

M.Tech. (CDS)
Department of Computational and Data Sciences
IISc Bangalore

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## EDUCATION

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|---|---|
| **Indian Institute of Science, Bangalore** | 2019 - Present |
| Master of Technology in Computational and Data Sciences, CGPA - 7.4/10 | |
| **University of Allahabad** | 2014 - 2018 |
| Bachelor of Technology in Computer Science and Engineering, 62.6% | |
| **Scholars Abode School** | 2011 - 2013 |
| AISSCE, CBSE, Class XII, 79.2% | |
| **St. Joseph's Public School** | 2010 - 2011 |
| AISSE, CBSE, Class X, CGPA : 9.6/10 | |

## ACADEMIC PROJECTS

**Arithmetic Math Word Problem Solver** *(January 2020 - June 2020)*
*(Data Analysis and Visualization | Guide: Prof. Anirban Chakraborty)*

- Designed an automatic solver based on **BiLSTM** model to solve arithmetic math word problems.
- Proposed an **Ensemble** model by combining the advantages of two other popular automatic solvers based on **ConvS2S** and **Transformer** models with this BiLSTM model.
- Achieved highest accuracy of 69.1% after testing the Ensemble model on **Math23K** dataset.

**ElfStore Fog Failures** *(January 2020 - June 2020)*
*(Scalable Systems for Data Science | Guide: Prof. Yogesh Simmhan)*

- Designed a fault-tolerant architecture within **ElfStore**, a distributed edge storage environment, to handle fog failures.
- Implemented the design to handle the migration of the edges of failed fog to a new fog and rebalance the fog topology to reflect the failures.

**Music Generation using Generative Adversarial Network** *(August 2019 - December 2019)*
*(Machine Learning for Signal Processing | Guide: Prof. Sriram Ganapathy)*

- Built a **GAN** model that works on continuous sequential data, to generate some good polyphonic piece of music.
- Trained the model on a collection of classical music in the form of **MIDI** files.

**Pedestrian Detection in Traffic Images with GPU Acceleration** *(January 2020 - June 2020)*
*(Parallel Programming | Guide: Prof. Sathish Vadhiyar)*

- Accelerated the process of pedestrian detection using **CUDA** optimization techniques.
- Implemented three detection pipelines : **HOG-SVM**, **LBP-SVM** and **HOGLBP-SVM**.
- Obtained lowest miss rate using HOGLBP-SVM with higher detection rate of 159 *fps* as compared to non-parallel approach with detection rate of only 3.3 *fps*.

**Chess AI Application** *(January 2018 - May 2018)*
*(B.Tech. Project | Guide : Prof. T.J. Siddiqui)*

- Applied **Minimax** algorithm to decide the best move out of all the next possible moves in the game for AI.
- Used **Alpha-beta pruning** to optimize the algorithm and make the move generation faster.
- Developed a browser based application and written the code for move generation and board visualization in JavaScript.

## INTERNSHIP

**Tata Consultancy Services** *(May 2017 - July 2017)*
*(Mentor : Mr. Saurabh Verma)*

- Developed an android game application similar to Pinball with various effects like varying bounce, powerups and scoring, using **Unity 3d** game engine.
- **Languages & Tools :** Unity 3d, Android SDK, C#

## TECHNICAL SKILLS

**Programming Languages :** C, C++, Python, Java
**API & Frameworks :** Open MPI, CUDA, OpenMP, PySpark, Unity 3D
**Tools & Libraries :** Scikit-learn, PyTorch, NLTK, Matplotlib, Keras, NumPy, Pandas, Android SDK
**Basic Knowledge :** HTML, CSS, JavaScript, MySQL, C#, LaTeX, Apache HDFS, Cassandra

## RELEVANT COURSES

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|---|---|---|
| Artificial Intelligence | Natural Language Processing | Introduction to Scalable Systems |
| Machine Learning for Signal Processing | Deep Learning | Scalable Systems for Data Science |
| Parallel Programming | Data Analysis and Visualization | |

## POSITIONS OF RESPONSIBILITY

- Head of the organizing committee of all singing events in **Avirbhav** (Annual Cultural Fest of JKIAPT) (2018)
- Organized and Hosted a quiz event *Bollywood Tambola* in **Avirbhav** (Annual Cultural Fest of JKIAPT) (2018)
- Member of organizing committee of all singing events in **Exuberance** (Welcome Ceremony for Freshers of JKIAPT) (2015)

## ACHIEVEMENTS

- Qualified for **Google Code Jam Round 1** (2019)
- Secured **99.5** percentile among **99932** students in **GATE 2019 (CS & IT)** (2019)
- Highest rating of **1861** *(sunny_8651)* on **CodeChef** (a competitive programming platform) (2018)
- Secured a rank of **112** in **Round 2** and a rank of **266** among **99473** participants in **Round 1** of **TCS CodeVita** (2017)
- Winner of **Duet Singing** event in **Avirbhav** (Annual Cultural Fest of JKIAPT) (2016)
- **Semi-Finalist** of Table Tennis competition in **Nirupan** (Hostel's Annual Fest) (2016)
- Winner of **Solo Singing** event in **Exuberance** (Welcome Ceremony for Freshers of JKIAPT) (2014)