Bhupender Dhaka

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EDUCATION

- **Indian Institute of Technology, Delhi** — New Delhi, India
  B.Tech and M.Tech in Mathematics & Computing (Dual Degree); CGPA: 7.5 — *July 2018 - May 2023*
  Courses: *Operating Systems, Data Structures, Analysis Of Algorithms, Probability & Stochastic Pro., Stochastic of Finance, Machine Learning, Computer Architecture, Cryptography*

- **Class XII, CBSE**; *Percentage : 92.6* (Jindal Public School, Sri Ganganagar, Rajasthan) — July 2017 - May 2018
- **Class X, CBSE**; *CGPA: 10* (Good Shepherd Public School, Sri Ganganagar, Rajasthan) — July 2015 - May 2016

SKILLS SUMMARY

- **Programming Languages** : C++, C, Python, Java, JavaScript, HTML, CSS, Bash
- **Software and Frameworks** : TensorFlow, Keras, NumPy, Pandas, MATLAB, Git, LaTeX, VS Code, NLTK, NodeJS
- **Soft Skills** : Leadership, Event Management, Teamwork, Communication Skills, Work Ethic

EXPERIENCE

- **J&F Projects India (Unit of J&F GmbH)**, Software Development (Intern) — May 2021 - July 2021
  - **BIM Viewer** : Developed using the xeolabs Software Development Kit with additional Markup and Storey View tools
  - Created a script to convert .ifc to .xkt format using **CLI** tools and worked on predicting layout in 3D from 360 images
  - Created a **python** program to label the emails according to their projects, handled spell errors & partial info. cases
- **Avakar Pvt. Ltd.**, Data Science (Intern) — May 2020 - July 2020
  - Created training data for Cough Classification using **Data augmentation** and performed **Feature engineering**
  - Developed a deep learning-based model to classify raw audio of cough and deployed it using **Google Cloud Platform**
  - Created **5k+** training examples for developing *Trigger Word Detector* model using cough as an active word

PROJECTS

- **Movie Recommender System**, Prof. Niladri Chatterjee, IIT Delhi — February 2021 - April 2021
  - **Collaborative Filtering** Recommendation Model using *User-User* and *Item-Item* Collaborative Filtering algorithms
  - Applied **Matrix Factorization** methods with custom loss function to reduce dominance of movies rated by more users
  - Developed a hybrid model (RMSE - **0.65** on *ml-100k data set*) using Auto-Encoder network and a DNN based model
- **Operating System Utilities**, Prof. Ashutosh Rai, IIT Delhi — February 2021 - May 2021
  - Built a **Linux-like shell** using *C* supporting all basic Linux commands and made custom cd and history commands
  - Designed custom **memory allocator** in *C* having its own malloc() and free() command along with heapinfo() function
  - **Page table simulator**, Implemented and Compared diferent strategies: OPT, FIFO, CLOCK, LRU, and RANDOM
- **Meme Classification**, Prof. Niladri Chatterjee, IIT Delhi — April 2021 - May 2021
  - Used **BERT transfer learning models** to generate sentence encoding based on *sentiment, humor, and irony*
  - Built a multi-modal NN to classify memes into offensive/funny based on embeddings for irony, political stance, sarcasm
- **Project Management System**, Prof. Subodh Kumar, IIT Delhi — October 2019- November 2019
  - Built using : **Trie, RB Tree, and Max-Heap**, Consists of User, Job and Project classes, Priority based scheduling
  - Supports queries of adding or increasing budget, fushing up long-awaiting jobs, and ordered statistics for users and jobs
- Other Projects
  - **Hotel Chatbot** using Rasa - Supported features: Bookroom, Request Room Cleaning, Handle FAQs, Handle Greetings
  - **The Wealth of Nations** - Econometric analysis of GDP of the countries based on their geographic/demographic cond.
  - **3D Triangular Mesh** - Realization of triangulation of solid models and their features using graph data structure
  - **E-commerce Platform** - Catalog and inventory structures implemented using Priority Queues with thread-safe ops.

SCHOLASTIC ACHIEVEMENTS

- **All India Rank 300** in Joint Entrance Examination among obc candidates (JEE Advanced-2018)
- **All India Rank 584** in Joint Entrance Examination among obc candidates (JEE Mains-2018)
- Recognized as **Best Researcher Intern** by Avakar Pvt. Ltd. for exhibiting excellent research in various projects

EXTRA CURRICULAR ACTIVITIES & POSITION OF RESPONSIBILITY

- **Gold** : High Jump, Spardha-19 IIT BHU & Athletics, Spardha-19 IIT BHU & 110 m Hurdles Athletics Inter Hostel
- **Silver** : Athletics, Inter IIT'19 & 4x100 Relay, Aahvaan DTU'20 & Inter-Hostel Music Video Competition
- Hostel POR's : **House Secretary** [2021-22], **Sports Secretary** [2020-21], **Athletics Captain** [2019-20]
- Other POR's : **BSW Mentor** [2020-21], **BSW Representative** [2019-20], **Activity Incharge, Speranza** [2019]