Sourav Kumar

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Programming Languages: C, C++(STL), Python, SQL, Shell.

Education
- **International Institute of Information Technology, Hyderabad,**   **August 2016 – Present.**
  B.Tech & Master of Science in Computer Science and Engineering by Research, GPA 7.61/10 (Graduating in May 2021.)
- **Golden Earth Global School, Sangrur, Punjab,**
  Senior Secondary, CBSE Board, Percentage - 91.8/100.   **July 2013 – May 2015.**
- **Sita Grammar School, Malerkotla, Punjab,**
  Secondary, CBSE Board, Percentage - 98/100.   **July 2012 – May 2013.**

Experience
- **Language Technologies Research Centre, IIIT Hyderabad - Research Project.**   **May 2018 – Present.**
  - Investigating the use of **Neural Interactive Translation Prediction** over post editing in translation productivity.
    - Produces text of comparable quality, reduce typing effort by 68%, decreases processing time by 15–20%.
  - Phrase Based Neural **Machine Translation** using a **Transformer** Model for low resource Indian languages (PyTorch).
- **Mobizite, USA - Data Analyst Intern.**   **June 2019 – July 2019.**
  - Built an Automatic Annotation tool for Information Extraction from ID cards using NLP and OCR models.
  - Achieved a 90% enhancement in time efficiency than the iterative method with an error rate of 20%.
- **Omikron Technologies, Kolkata -Full Stack Developer Intern.**   **May 2019 – Oct 2019.**
  - Will have to closely work with technical folks in solution designing, development, testing and deployment tasks.
  - Coordination with team and Management of risks and resolve issues that affect release scope, schedule and quality.
- **Taxi1way, Hyderabad - Software Developer Intern.**   **Aug 2017 – Nov 2017.**
  - Developed a Standalone Android App that provide online Taxi booking facility with secure payment gateway.
  - Accomplished 53% faster nginx server response time by restructuring web2py RESTful APIs.
- **Smarter Cam | My Mega Minds - Freelancing.**   **Aug 2019 – Sep 2017.**
  - Implement Real time algorithm for AI camera that notify user using IFTTT when motion/human is detected by camera.
  - Hosted the API for Paypal secure subscription payment gateway for Smarter Cam.
  - Integrated the Tutor Screen-recording with audio in chunks and sending to server simultaneously.

Projects Undertaken
- **Information Retrieval and Extraction – Wikipedia Search Engine.** (Python)
  - Constructed Inverted Index from a snapshot of Wikipedia dump by parsing & tokenization that supports field queries.
  - Accomplished **75% faster response** in search by reducing the size of the index file to **1/4th of the dump**.
- **Natural Language Processing – Language Model** (Python)
  - Built a Domain-specific Tokenizer & created n-gram models for words and alphabets over it.
  - Built **grammatical and spell correctors** as well as next word prediction using the above models.
- **Machine Learning – Sentimental Analysis | Named Entity Recognition | Classification .** (Python).
  - Implemented **Regression Decision Tree** Classifiers for time series data on used Car Sale Dataset.
  - **NER** for code mix data using word, character and lexical features with Decision Tree, LSTM, CRF algorithms.
  - **Sentimental Analysis** of twitter tweets by extracting feature vector(word2vec) using neural network algorithms.
- **Distributed Systems – "Aao Ji" the Chat Room.** (C++)
  - Implemented a File sharing and management system that **simulates group chats** and runs on multiple systems.
- **Artificial Intelligence – Tic-Tac-Toe AI Bot.** (C)
  - Developed an Agent for a 4x4x4x4 game using IterativeDeepening and Min-Max algorithm with Alpha-Beta Pruning.
- **Operating Systems – A Linux bash Shell using system calls.** (C)
  - Implemented basic built-in commands like cd, ls, pwd, echo, rm as well as piping and redirection.
- **Computer Networking – File Transfer System and Proxy Server.** (C)
  - Established both persistent and non-persistent connections for file transfer between client and server.
  - Built a multi-threaded HTTP proxy server with caching, blacklisting functionality using socket programming.
- **Data Mining – Association Rule Mining**. (R Studio)
  - Created Association Rules using Frequent Pattern Trees for **Election Behaviour Analysis** from the Election Data.

Skills
- Experienced **Self Learner;** Using **GCP VMs, Firebase;** skilled in **Bash Scripting**, Public Speaking (Workshops, debates)**.**
- CNNs, RNNs, Deep RL, Optimization Algorithms, Tensorflow, Keras, Node JS 10.x, Flask , Web2Py.

Leadership & Awards
- **Top 3 Position in Walmart Hackathon** for building an AI-driven chatbot (Team - Cybertron).   **November 2018.**
- Ranked **1956/1.2 million** participants **(99.837 percentile)** in JEE Mains 2016.   **April 2016.**
- Worked as **Sponsorship coordinator** for Felicity(College Fest). We collected sponsorships worth **75 lakh Rupees.**
  It gave me an opportunity to manage expenses of a big event as well as helped in improving **negotiation skills.**
- Worked as a **Teaching Assistant** for a My mega minds group of online Education (Python).   **July 2017 - Nov 2017.**
- **Programming Club** Member at college. We teach and practise competitive programming as a culture.   **July 2017-present.**

Interests : Natural Language Processing, Computer Vision, Software Development for medical discoveries technologies.

Hobbies: Listening Music, Dance, Bhangra, Strength Training, Reading tech news, Chess, Swimming.