

ABHINAV JINDAL

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EDUCATION

Master of Science (Honors), University of Southern California

August 2022 – May 2024

Computer Science (CGPA: 4.0/4.0)

Los Angeles, California

- Key Courses: Analysis of Algorithms, Database Systems, Web Technologies, Game Development, Applied Natural Language Processing, Machine Learning for Data Science, Multimodal Probabilistic Learning.

Bachelor of Technology (B.Tech), Indian Institute of Technology (IIT), Ropar

July 2016 – May 2020

Computer Science and Engineering (CGPA: 9.05/10)

Ropar, India

- Key Courses: Data Structures, Algorithms, Databases, Operating Systems, Computer Networks, Artificial Intelligence, Machine Learning, Computer Vision, Multimedia Systems, Image Analysis, Probability Theory, Linear Algebra.

EXPERIENCE

Software Engineer

October 2022 – Present

USC Information Sciences Institute

Los Angeles, California

- Designed specialized prompts for OpenAI GPT and Hugging Face LLMs, including Code Llama and CodeT5, to facilitate code description, question and answering tasks, and confidence retrieval through FastApi and Flask service.
- Introduced Elastic-Search and Faiss Knowledge Store APIs for efficient retrieval of SBERT-embedded documents.

Graduate Software Engineer Intern/Co-op

May 2023 – Jan 2024

Intel

Santa Clara, California

- Optimized speed and prevented future regressions of the Cobalt graphics simulation module.
- Analyzed the code-base using VTune to identify and address bottlenecks, resulting in a 300% boost in CPU frequencies.

Software Engineer I

June 2020 – August 2022

D.E. Shaw (Schrödinger)

Hyderabad, India

- Developed data pre-processing, computational and visualization tools to accelerate drug discovery and material science.
- Directed Admin Panel's React transition and containerization, enhancing tech-stack and development experience.
- Revamped the LDL service pipeline using Docker and Jenkins for seamless interaction between the LD and ML models.

Data Science Intern

May 2019 – July 2019

Linkbal Inc.

Tokyo, Japan

- Developed predictive models using CatBoost and deep learning, attaining a 92% accuracy rate in event ranking.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, TypeScript, Docker, Kubernetes, SQL, Kotlin, HTML/CSS

Frameworks: React, Flask, FastAPI, MongoDB, Django, Hibernate, PyTorch, Tensorflow, Keras, Elasticsearch, OpenCV

Developer Tools: Git, GCP, Jupyter Notebook, Colab, MatLab, Jenkins, VTune, Android Studio, Visual Studio

PROJECTS

Ebay Search Portal

| *React, Flask, Android Studio, Kotlin, MongoDB, GCP*

- Developed and deployed a robust web and android application on GCP for efficient searches across millions of eBay products.
- Integrated multiple APIs, including eBay search, IPinfo, and Google, to offer comprehensive product details.

Entity Possession Game

| *C#, Unity*

- Created an innovative platformer game featuring entity possession mechanics, where players can control various entities, each with unique abilities, to strategically navigate and complete challenging levels.
- Conducted user testing sessions to gather feedback, leading to iterative improvements enhancing game playability.

Formality Transfer and Offensive Language Mitigation

| *Python, OpenAI GPT, LLM, NLP*

- Executed fine-tuning of OpenAI's LLM GPT-3 with a custom-designed dataset, aiming to transform toxic, informal sentences into refined and considerate formal expressions.
- Designed a dataset with 500 instances for sentence reformation, attaining fluency and performance on par with humans.

Medical Segmentation Decathlon

| *Python, PyTorch, Keras, Computer Vision*

- Innovated in modeling single 3D segmentation across different tasks and adapting to unseen tasks without annotations.
- Trained U-NET FCN-based model along with 3D image processing techniques, attaining Dice scores surpassing 90%.

HONORS AND AWARDS

- Admitted in the USC **MSCS Honors** for maintaining perfect grade.
- Merit Scholarship at IIT Ropar for securing **AIR-1343 (99.91 %ile)** in IIT-JEE and **State Topper** in JEE Mains.