

# Apoorv Chandrakar

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## Education

- 
- Stevens Institute of Technology**, Hoboken, NJ Sept 2022 – May 2024
- Master of Science, Computer Science, GPA 3.86
  - Graduate Professional Certificate in Databases
- Chhattisgarh Swami Vivekanand Technical University**, Bhilai, CG Sept 2015 – May 2019
- Bachelor of Engineering, Computer Science and Engineering, GPA 8.33 (Honors)

## Projects

### Extended SQL

- Developed a custom extension of SQL engine, reducing query execution time by 20% for OLAP queries with multiple joins.
- Implemented an efficient single-pass algorithm for computing aggregates, optimizing system efficiency and throughput.
- Designed and implemented a query parsing and arithmetic operations module, enabling SQL-like querying within the project.

### Project Homie

- Led the ideation and system design of Homie, a recommender system-based web app for seamless roommate matching.
- Achieved a best-in-class score of 103/100 in CS546 for developing unique recommendation engine, REST APIs and functions.

### University Admit Predictor

- Implemented ensemble learning techniques and advanced tuning to forecast admits without relying on external essay inputs.
- Built a predictive analytics model leveraging GBM to achieve ~72% accuracy in cross-validation tests for university admissions.

## Experience

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**Graduate Lab Assistant**, Stevens Institute of Technology Feb 2023 – Present  
Hanlon Financial Systems Labs

- Built a [backend module for data ingestion](#) from Bloomberg Terminal, S&P Capital IQ, Refinitiv Realtime News, and WRDS DBs.
- Developed a module to auto-generate and publish daily digests of [stock performance and media sentiment](#) for stock portfolio.
- Contributed to research in applying Reinforcement Learning to financial systems by optimizing scripts for maximum efficiency.

**AI Research Fellow**, Stevens Institute for Artificial Intelligence Jun 2023 – Aug 2023  
Human Centered AI Systems Lab

- Developed [health context driven chatbot](#) using LSTM-based NLP techniques, delivering personalized health recommendations.
- Processed data from Fitbit fitness trackers, weekly PHQ-9 survey and thrice-daily wellbeing surveys of 45 student athletes.
- Utilized time series analysis techniques to extract insights and detect patterns in the data obtained by the sensors and surveys.
- Implemented [explainable AI methods](#) like SHAP to interpret and understand the model, providing more meaningful insights.

**Machine Learning Consultant**, Tata Consultancy Services Mar 2020 – Aug 2022  
Life Sciences, Analytics & Insights

- Designed & delivered POCs for 2 leading European pharmaceutical clients using word2vec embeddings for similarity detection.
- Developed Python modules for Form Processing and Human Reading Mimicking using NLP techniques on MEDDRA data.
- Served as AWS compute and DB admin for the dev environment, & managed tech governance & IP compliance (TCS: IP Safe).
- Assisted in client requirement gathering sessions, ensuring alignment between technical solutions and business objectives.

**Data Engineer**, Tata Consultancy Services Jun 2019 – Mar 2020  
E-Commerce, Cloud Engineering

- Automated data extraction and query generation for AWS Redshift, streamlining processes and reducing team workload.
- Developed and deployed a PySpark-based time-triggered file migration script, enhancing data reliability and efficiency.
- Migrated the product data pipeline from on-premises infrastructure to the AWS cloud environment, ensuring scalability.

## Contributions and Awards

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- [Stevens AI Research Fellowship 2023](#): Recognized for impactful research contributions in Artificial Intelligence at SIAI.
  - Stevens Provost Scholarship 2022: Awarded for academic achievement and demonstrated excellence in Computer Science.
  - [Global AI Awards 2020-21](#): Honored in the category 'Best Technical Implementation of AI' for our team product: TCS ADD.
  - [TCS On Spot Award 2020](#): Awarded for exceptional ingenuity in building in-house performance improvement utility.

## Skills

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**Programming:** Python, R, C++, CUDA, JavaScript, Java, HTML, Shell Scripting.

**Databases:** SQL (PostgreSQL, MySQL, Redshift), NoSQL (MongoDB), Vector DBs (Pinecone, Elasticsearch, FAISS), Graph DB (Neo4j)

**AI:** Machine Learning, Deep Learning, PyTorch, TensorFlow, NLP (BERT, GPT), Transfer Learning, Hyperparameter Optimization, GANs, AutoML, GNNs, Bayesian Methods, Hugging Face Transformers, Langchain, SpaCy, NLTK, OpenAI, Scikit-learn.

**Others:** AWS, GCP, Spark, Hadoop, Data Visualization (Matplotlib, Seaborn, Plotly), Git, Docker, Node.js, Express, CSS, Firebase, Jira, Agile Methods, Statistics, Data Storytelling, Technology Consultation, Industry Domain Knowledge (AI, Healthcare, Finance).