Jannat Chehal

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AI and Machine Learning researcher specializing in deep learning, transformer architectures, and building scalable AI solutions. Experienced in developing models for natural language and applying data-driven techniques to solve complex, real-world challenges.

Education

- **Virginia Commonwealth University**, Richmond, Virginia
  MS in Computer Science, GPA: 3.9 *Aug 2024 – Present*
- **CHRIST University**, Bangalore, India
  Master of Computer Applications, GPA: 3.7 *Jul 2023 – May 2024*
- **University of Delhi**, New Delhi, India
  Bachelor of Science in Applied Physical Science, GPA: 3.6 *Jul 2019 – May 2022*

Experience

Natural Language Processing Lab, Virginia Commonwealth University
Research Assistant *Jan 2025 – Present*

- Engineered scalable data preprocessing pipelines and ensured annotation quality on 50,000+ biomedical entities from PubMed for supervised learning tasks.
- Developed and fine-tuned deep learning models (CNNs, transformers) using PyTorch Lightning for relation extraction in biomedical NLP.
- Enhanced model performance and automation, supporting AI-driven biomedical research and knowledge discovery.

Engineering Career Services, Virginia Commonwealth University
Graduate Student Software Engineer *June 2025 – July 2025*

- Built a student-alumni mentoring interface using Google Sheets and Apps Script, at the request of Career Services.
- Implemented mentor profile viewing, single-session booking restriction, and automated email delivery of mentor details.
- Currently used by 100+ students, streamlining the mentorship process and enhancing student-alumni engagement.

Virginia Commonwealth University, Richmond, Virginia
Teaching Assistant | Intro to Engineering | C Programming *Sep 2024 – Dec 2024*

- Led programming labs teaching fundamentals of algorithms, data structures, and efficient coding practices.
- Assisted 30+ students in debugging, problem-solving, and project implementation.

Raceme Tenders LLP, Delhi, India
Software Engineer Intern *Mar 2022 – Mar 2022*

- Updated legacy backend systems, improving efficiency and maintainability.
- Migrated key services to AWS Cloud for scalability and reliability.
- Enhanced application performance through system optimization and refactoring.

Software Engineer Intern *Sep 2021 – Sep 2021*

- Developed automated data scraping tools using Python and Selenium to collect structured data from dynamic web sources.
- Improved data pipeline efficiency for tender document processing by 50%.

Projects

Relation Extraction on Biomedical Texts | Python, PyTorch, Transformers, WandB **Source**

- Built a hybrid CNN + transformer model to extract chemical-disease relations from biomedical literature, improving F1-score by 7% over baseline.
- Utilized state-of-the-art transformer models (DeBERTa) and deep learning techniques for entity-level relation prediction.
- Implemented experiment tracking and visualization with Weights & Biases (WandB).

Tennis Video Analysis System | Python, YOLOv8, Streamlit, OpenCV, PyTorch **Source**

- Built an interactive app to analyze tennis match videos, tracking player movements, ball trajectories, and court zones.
- Trained YOLOv8 on 2,000+ custom-labeled images for object detection; visualized key statistics using overlays.
- Enabled coaches to gain actionable insights through automated video analytics.

RideShare | React Native, Firebase, Node.js, Open Street Maps API **Source**

- Developed a real-time carpooling app with route tracking, ride booking, and Firebase-powered state management.
- Integrated geolocation and map APIs to optimize routing accuracy.
- Encouraged sustainable transportation by facilitating shared rides and reducing solo trips on campus.

Technical Skills

Frameworks & Libraries: PyTorch, Numpy, Pandas, Tensorflow, HuggingFace, React, Express.js, Next.js, Tailwind CSS
Tools & Platforms: Git, GitHub, Weights & Biases, Firebase, Prisma, MySQL, MongoDB, AWS
Core Competencies: Deep Learning, NLP,Deep Learning and Neural Network, Machine Learning, Data Statistics using R, Data Science, Data Structures,Databases,Statistics, Linear Algebra,Python, Object-Oriented Programming