Rishank Singh

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Professional Summary

Ph.D. candidate in Computer Science specializing in transfer learning and foundation models for LLMs. Expertise in developing and customizing LLMs for downstream tasks, with recent work in healthcare tech, data-driven solutions, and dynamic web applications. 6+ years of experience in software engineering and research, with strengths in software development, algorithm implementation, and technical writing. Skilled in cross-functional collaboration, mentoring, and applying cutting-edge machine learning to real-world challenges. Passionate about advancing AI for complex problem-solving and human-computer interaction.

Education

UNIVERSITY OF MASSACHUSETTS, BOSTON   **EXP MAY '26**
- Ph.D.: Computer Science
- *Cumulative GPA: 3.97*

UNIVERSITY OF MASSACHUSETTS, BOSTON   **MAY '24**
- Master of Science: Computer Science
- *Cumulative GPA: 4.0*

RAJASTHAN TECHNICAL UNIVERSITY, JAIPUR   **MAY '17**

- Bachelor of Science: Computer Science

Research Experience

RESEARCH ASSISTANT | UMASS BOSTON | **MAR '23–PRESENT**
- Conducting cutting-edge research on transfer learning under the LLM paradigm to build scalable and efficient models for various tasks.
- Collaborating on projects related to healthcare technology, including the detection of dementia using voice assistant systems and diet monitoring for older adults.
- **Developed a tracking device to monitor movements of geriatric patients, with a patent filed in 2023.**
  Presented findings at international conferences and published research in reputed journals.
  Projects Undertaken:
  - **Tracking Device**: Invented a device to track the movements of older adults.
  - **Diet Dashboard**: Build a dashboard to monitor the dietary plan for older adults.
  - **Dementia detection**: Part of the research team to detect dementia in older adults using a voice assistant system.

Teaching Experience

TEACHING ASSISTANT | UMASS BOSTON | **SEP '24–PRESENT**
- Assisted with grading, lab sessions, and student support during office hours.
- Helped students troubleshoot code, explain programming concepts, and facilitated discussions.
- Supported course material preparation and provided feedback on assignments.
- Encouraged best coding practices and assist with projects and exams.

Professional Experience

STUDENT ASSISTANT | HEALEY LIBRARY, UMASS BOSTON | **APR '23–SEP '23**
  Projects Undertaken:
  - **Library Subdomain Development:** Designed and implemented new web pages for Healey Library's subdomains, optimizing accessibility and user experience.
  - **UMBrella Modernization:** Upgraded the legacy UMBrella application by integrating dynamic features using modern frameworks and technologies, enhancing performance and usability.
  - **VPN Data Analytics:** Collected, processed, and visualized VPN usage data using Tableau, providing insights to improve network security and optimize resource allocation.

ENGINEER | NOKIA | **FEB '21 – JUL '22**

    Projects Undertaken:
- **Project management application:** Built an internal application to manage human and financial resources along with deadlines and productivity in a project.
- **Onboarding application:** Build an interactive react application for new joiners to the people and process of the firm.
- **Conference Application**: Part of team to build, manage and support teleconference meeting application.
- **IVR application**: Part of team to build, manage and support IVR application.

SOFTWARE ENGINEER | CHETU INC. | **JUL '17 – NOV '20**

    Projects Undertaken:
- **Jitsi conference application:** Software platform used for video communications (Meetings), messaging (Chat), voice calls (Phone)
- **Online video library application:** Online video library to maintain a healthy lifestyle at the time of the pandemic.
- **Human resource management application:** An application that could manage large-scale human resources in an organization
- **Mental health service application:** An application to ensure the mental health safety of an individual using online therapy.

Publications and Presentations

- John A. Batsis, **Rishank Singh**, Jennifer Poole, Paige Bramblett, Danae Gross, Meredith Gilliam, Chaterlee Pamintuan, Beckham Nora, David H. Lynch, Xiaohui Liang, *A Preliminary Usability Evaluation of an Artificial Intelligence-based, motion-detecting Wearable device: the Geriatric Functional Assessment System*, Journal of Gerontology: Medical Sciences, 2025 (Accepted).
- **Rishank Singh**, Sankalp Vaish, Xiaohui Liang, John Batsis, Jennifer Grace Poole, Danae Gross, *Clinical Geriatric Functional Assessment using Wearable Sensing and Machine Learning*, IEEE International Conference on E-health Networking, Application & Services, Healthcom 2024.
- **Rishank Singh**, Sahil Chaudhary, *Emotion Intelligence on Text Data Repositories*, SKIT Research Journal, Volume 6, Issue 1, 2016.
- Presented *"Cloud Computing: Future Pillar for E-Governance"* at the **1st International Conference on Innovative Advancement in Engineering and Technology (IAET 2014)**, Jaipur National University, Jaipur, India.
- Presented *"Cloud Networking: Evolving Networks"* at the **4th National Conference on Emerging Technologies in Computer Engineering (NCETCE-2014)**, Swami Keshvanand Institute of Technology, Jaipur, India.

Skills

- Programming: Python, Java, TensorFlow, PyTorch, ReactJS, NextJS, JavaScript, C++
- Machine Learning & AI: Transfer learning, Foundation models, Large Language Models (LLMs), Deep learning frameworks
- Research Fields: Speech and language processing, Spoken language understanding, Multi-modal learning, In-context learning, Speech-based health diagnosis, Fine-grained image classification
- Data & Tools: Tableau, Visual Studio Code, IntelliJ IDEA, MySQL, PostgreSQL, MongoDB, Amazon RDS, SQLite

Recent awards and recognition

- Participated and completed at the new England Regional Innovation Node Sparks Program at MIT (Summer 2024).
- Filed a patent for a tracking device developed for geriatric patients at UMass Boston (2023).
- Awarded Best Project of the Quarter at Chetu Inc. (2018).
- Recognized for academic excellence and contributions to technology advancement at SKIT, Jaipur.