Maharshi **Gor**

Deep Learning Researcher · Software Engineer

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Skill Set

Research Interests: NLP, Question Answering, Retrievers, Multi-linguality, Deep Learning, Representation Learning

Tools and Technologies: Python, Java, C/C++, R, Matlab, JavaScript, SQL, Redis, Neo4j, DGraph

Frameworks: Huggingface, PyTorch, JAX, LangChain, DSPy, T5X, TensorFlow, Keras, Apache Beam, Django, Spring

Education

University of Maryland
College Park, MD, US

M.S / Ph.D. in Computer Science — Natural Language Understanding | GPA: 4.0/4.0

Fall 2021 - Fall 2026

Advisors: Prof. Tianyi Zhou and Prof. Jordan Boyd-Graber

Visvesvaraya National Institute of Technology (VNIT)
Nagpur, India

B.Tech. in Computer Science and Engineering

July 2012 – May 2016

Publications and Preprints

Maharshi Gor, Tianyi Zhou, Hal Daumé III, Jordan Boyd-Graber "Do great minds think alike? Investigating Human-AI Complementarity for Question Answering", ***Preprint 2024*** [pdf]

Gaurang Sriramanan, **Maharshi Gor**, Soheil Feizi, "Toward Efficient Robust Training against Union of L_p Threat Models", ***Neural Information Processing Systems (NeurIPS), 2022*** [pdf] [Oral at ADVML FRONTIERS, ICML 2022]

Maharshi Gor, Kellie Webster, Jordan Boyd-Graber, "Toward Deconfounding the Influence of Entity Demographics for Question Answering Accuracy", ***Empirical Methods in Natural Language Processing (EMNLP), 2021*** [pdf] [arXiv]

Julian Martin Eisenschlos, **Maharshi Gor**, Thomas Müller, William W. Cohen, "MATE: Multi-view Attention for Table Transformer Efficiency", ***Empirical Methods in Natural Language Processing (EMNLP), 2021*** [pdf] [arXiv]

Jogendra Nath Kundu*, **Maharshi Gor***, Dakshit Agrawal, R. Venkatesh Babu, "GAN-Tree: An Incrementally Learned Hierarchical Generative Framework for Multi-Modal Data Distributions", ***IEEE International Conference on Computer Vision (ICCV), 2019*** [pdf] [arXiv]

Jogendra Nath Kundu*, **Maharshi Gor***, R. Venkatesh Babu, "BiHMP GAN: Bidirectional 3D Human Motion Prediction GAN", ***33rd AAAI Conference on Artificial Intelligence, 2019*** [pdf] [arXiv]

Jogendra Nath Kundu*, **Maharshi Gor***, Phani Krishna Uppala, R. Venkatesh Babu, "Unsupervised Feature Learning of Action Sequences as Trajectories in Pose Manifold", ***IEEE Winter Conf. on Applications of Computer Vision (WACV), 2019*** [pdf] [arXiv]

** equal contribution - names listed alphabetically*

Research/Work Experience

Cohere
Remote, MD, United States

ML Research Intern | Mentors: Patrick Lewis

May. 2023 - Aug. 2023

Investigation into error modes of citation and claim generation quality for Retrieval Augmented Generative (RAG) models.

X, the Moonshot Factory / Google Labs
Mountain View, CA, United States

Student Researcher | Mentors: Michele Catasta, Aakanksha Chowdhery, Christian Szegedy

May. 2022 - Dec. 2022

Semi-confidential work on long-context document understanding and Code synthesis using external memory based LLMs.

Google Research
New York, United States

AI Researcher, NLP | Mentors: Prof. Jordan Boyd-Graber, Prof. William Cohen

Aug. 2019 - Aug. 2021

- **Toward Deconfounding the Influence of Entity Demographics for Question Answering Accuracy [EMNLP 2021]**
  - The study investigates whether the demographic characteristics of question entities affect the accuracy of models Question Answering (QA) tasks. It explores if questions related to certain professions or genders are easier to answer and identifies any biases present in these datasets.
- **MATE: Multi-view Attention for Table Transformer Efficiency [EMNLP 2021, Oral]**
  - A novel Transformer model architecture that **uses web table structures to enhance inductive bias and reduce memory usage**, enabling **processing of sequences over 8000 tokens.** It significantly **improves accuracy by over 19 points** on the HybridQA dataset, a complex Question Answering challenge involving both structured and unstructured data.

Video Analytics Lab

Bengaluru, India

Visiting Researcher | Advisor: Prof. R Venkatesh Babu

Jan. 2018- Apr. 2019

- **GAN-Tree: An Incrementally Learned Hierarchical Generative Framework for Multi-Modal Data Distributions [ICCV 2019]**
  - A hierarchical tree framework for Generative Adversarial Networks (GANs) for learning multimodal disjoint data distributions supporting incremental learning of data samples from a new distribution and maintaining persistency across all versions
- **BiHMP GAN: Bidirectional 3D Human Motion Prediction GAN [AAAI 2019, Spotlight]**
  - A generative approach for 3D human skeleton sequences using a novel Discriminator architecture, enabling content loss in a probabilistic framework
  - Shows superiority, both in terms of qualitative and quantitative measures, over previously available state of the art methods for both long-term human motion generation and short-term forecastings.
- **Unsupervised Feature Learning of Action Sequences as Trajectories in Pose Manifold [WACV 2019, Oral]**
  - Modelled sequences of the pose embeddings as a trajectory in the pose manifold.
  - Achieved competitive state-of-the-art results for action recognition task with minimal supervision on labeled information while comparing against previous fully-supervised deep learning approaches.

Amazon

Bengaluru, India

Software Engineer | Amazon Android Appstore

Aug. 2017 - Dec. 2017

- Contributed to re-architecture of the back-end services for App Submission and Catalog Ingestion.
- Contributed to Database migration from Oracle to Postgres

Trilogy Innovations

Bengaluru, India

Software / Innovation Engineer

July. 2016 - July. 2017

- **Semantics Addition and Relevance Improvement of a Search Engine of an intra-org social network using a Knowledge Graph.**
  - Achieved Word Sense Disambiguation through Lexical and Topological Query Enrichment using Community Clustering on KG.
  - Reduced the TP90 response time from 8s to 500 ms
- **Fuzzy Classification System for source code commits of projects on Version Control Systems.**
  - Developed a commit classification system over a VCS and automated it as service for continuous provision of comprehensive details of the kind of contribution made by a developer on/across project(s)
- **A Gamification Framework around agile processes for achieving enhanced productivity of software developers.**
  - Product-designer and primary architect of the core framework.
  - Created 20 new code quality metrics for measurement of various categories of developer productivity.
  - Introduced, developed, and shipped the prototype to the client in 6 months period.

Honors & Awards

2021 **Student Conference Travel Award by EMNLP**, EMNLP 2021

2021 **Dean's Fellowship and Chair's Fellowship Award**, University of Maryland, College Park

2019 **Microsoft Research Travel Grant**, AAAI 2019

2019 **ACM India-IARCS Travel Grant**, AAAI 2019

2018 **Country Rank (United States) 60, across 100,000 active users**, CodeChef Rankings — ***Profile Link***

2013–16 **Top 60 every year, across over 6000+ teams** , ACM ICPC (International Collegiate Programming Contest) on-site Asia Regionals

2013–15 **Consistent 1st prize Winner**, Freak-O-Matix, the open mathematics Olympiad at VNIT (Undergrad)

2009-11 **Country Rank (India) 22, State Rank in top 5**, Indian National Mathematics Olympiad (INMO)

Activities

2024 **Reviewer**, ACL 2024 (ARR)

2021 **Program Committee Member**, Workshops in **ACL 2022**, **NAACL 2022**

2020-21 **Reviewer**, ICLR 2022, NeurIPS 2021, ACL 2021, EMNLP 2020, ICML 2020, ACL 2020

2018 **Problem Setter**, MindSpark 18 Codeathon, organized by College of Engineering, Pune on Codechef. — ***Pune, India***

2017 **Problem Setter**, CodeAgon 2017 - The All India Hiring Challenge for Codenation Solutions. — ***Bengaluru, India***