Mohit Vaishnav, PhD

Artificial Intelligence Engineer

Profile

Experienced AI Engineer with a demonstrated history of building high-impact AI systems. Founder of an AI startup focused on compliance automation and a postdoctoral researcher at TalTech, driving innovation in multimodal reasoning. Proven expertise in delivering AI products from conception to deployment, managing stakeholder expectations, and optimizing user value through data-driven product strategies. Skilled at translating cutting-edge research into scalable, user-centered technology solutions.

Work experience

Present day ↑ 05/2024

Founder and CEO

Kimova AI, Tallinn, Estonia

- Spearheading the design and development of **TurboAudit**, an AI-driven platform that automates cybersecurity and compliance auditing tailored for auditors and SMEs.
- Oversaw product strategy, user research, and feature prioritization to build tools like AI Audit, Policy Analyzer, Ask ISMS, and Ask AIMS.
- Defined end-to-end product lifecycle—from ideation to deployment—by working closely with engineering, legal experts, and compliance consultants.
- Introduced iterative development cycles incorporating user feedback to improve product-market fit and scalability.

Present day ↑ 10/2024

Postdoctoral Researcher

Applied AI Group, TalTech University, Estonia

- Leading multidisciplinary research under the EXAI grant focusing on *multimodal reasoning agents* and *human-aligned AI systems*.
- Designing novel evaluation pipelines for large vision-language models using real-world visual reasoning datasets.
- Developed AI agents demonstrating enhanced reasoning capabilities, aiming to surpass human performance benchmarks.
- Designed reasoning methodology that established new state-of-the-art benchmarks on real-world datasets.

05/2024 ↑ 01/2024

Data Scientist

Center for AI and Automation, Sandvik Gmbh

- Led development and deployment of end-to-end AI solutions within an Azure environment, collaborating with stakeholders to align business needs and execute strategic initiatives.
- Working towards delivering platform responsibility, ensuring seamless integration and optimization of AI services to enable capability creation and accelerate business growth in a dynamic international environment.

Contact

Email
mohit.vaishnav@gmail.com

Website
vaishnavmohit.github.io

Skills

Core AI & ML Foundations

- Deep Learning
- Artificial Intelligence
- Computer Vision
- Generative AI
- Large Language Models (LLMs)
- Medical Imaging
- Data Analytics

LLMs & Advanced Techniques

- LLM Application Design (LlamaIndex)
- Retrieval-Augmented Generation (RAG) pipelines
- Prompt Engineering & Evaluation
- Agentic Systems / AI Agents
- Visual Reasoning
- Multimodality
- Attention & Memory based Models

Programming & Tools:

- Python
- Pytorch
- Scikit-Learn
- Pandas / Numpy
- OpenCV
- Git / Github
- High Performance Computing (HPC)
- Slurm Workload Manager

Cloud Platforms & DevOps:

- Google Cloud Platform (GCP)
- Cloud Hosting & Management
- Docker / containerization

01/2024 ↑ 11/2023

Researcher

German Research Centre for Artificial Intelligence (DFKI)

- Initiated the work of designing perception systems specifically tailored for driver behavioral modeling within the domain of connected, cooperative, and automated mobility (CCAM) project *BERTHA* – an EU Horizon project.
- Conducted the first study to apply Bayesian Belief Networks (BBN) extensively to construct scalable and probabilistic Driver Behavioral Models (DBM), ensuring both technological feasibility and practical applicability in real-world scenarios.

04/2023 ↑ 10/2019

Doctoral Researcher

Brown University (USA) / ANITI (France)

- Conducted research and identified the challenges faced by machines in performing abstract reasoning tasks, highlighting its disparity with humans' performance.
- Developed novel architecture by leveraging insights from cognitive science literature, specifically the role of attention and memory.
- Created a prototype model that successfully combines attention and memory, resulting in state of the art performance on two visual reasoning dataset.
- Designed and optimized multi-million parameter models utilizing Transformer architecture to accommodate higher resolution images without compromising computational complexity, resulting in outstanding performance on real-world classification challenges.
- Published papers in prestigious conferences and journals including NeurIPS, ICLR, and Neural Computation, showcasing research contributions and expertise.
- Collaborated with interdisciplinary teams and projects across institutes during the course of the PhD, fostering a collaborative and dynamic research environment.
- Worked with a multi-GPU environment using Slurm workload manager on High performance computing clusters such as Oscar and CALMIP.

09/2019 ↑ 02/2019

Research Engineer

WeDiagnostiX, Paris France

- Developed the first working prototype for the classification and understanding of maxillary structures from X-ray images.
- Demonstrated expertise utilizing Deep Learning algorithms for semantic and instance segmentation of teeth.
- Created an end-to-end pipeline, including data collection and labeling, to build a functional model.
- Responsible for the entire project, ensuring smooth progress from data collection to the development of a fully operational prototype.

09/2018 ↑ 06/2018

Research Engineer

Quelia Systems, Paris France

- Developed an application for estimating tire wear during a summer internship.
- Utilized computer vision techniques and a portable mobile camera to measure the depth of tire treads.
- Contributed to enhancing safety on the road by providing a user-friendly solution for assessing tire conditions.

08/2017 ↑ 09/2016

Startup Founder

Kevin Technology, Rajasthan India

- Founded a start-up with a vision to develop surveillance system based on computer vision techniques.

Publication

Google scholar – for complete list

- GAMR: Guided Attention Model of (visual) Reasoning." *International Conference on Learning Representations*
- A Benchmark for Compositional Visual Reasoning. *In Proceedings of the Neural Information Processing Systems (NeurIPS)* Track on Datasets and Benchmarks
- Understanding the Computational Demands Underlying Visual Reasoning. In Special Collection CogNet of *Neural Computation*
- Conviformer: Convolutionally guided Vision Transformer. *ArXiv*

Awards

- Agence Nationale de la Recherche (ANR) fellowship during Ph.D.
- Charpak Masters Scholarship from French Government
- Santander Grant by University of Girona
- Erasmus+ Mobility Grant by European Commission
- Bourgogne Regional Council Grant
- Kishor Vaigyanic Protsahan Yojna fellowship funded by Govt. of India
- Travel grant from Microsoft Research India

Leadership

- Elected as Student representative for *ANITI*, France
- Elected Member of Senate, *Science and Tech. Council*, LNMIIT, India
- Founder and Membership head, *IEEE Student branch*, LNMIIT, India

Reviewer Task

- IEEE Transaction on Evolutionary Computation
- NeurIPS
- CVPR
- ICML
- ECCV

08/2016 ↑ 10/2014

Assistant Manager

Shree Bherunath Granite, Rajasthan India

- Assisted in establishing granite mines for the family business and assumed a pivotal role in managing the daily operations.
- Supervised a team of 20 employees, ensuring smooth workflow and efficient execution of tasks.
- Implemented strategies and process improvements that positively impacted the overall efficiency and productivity of the team.

09/2014 ↑ 09/2013

Research Assistant

Indian Institute of Technology, Jodhpur India

- Successfully developed innovative methodologies for lossless video compression, contributing to the field of data compression.
- Published research work in a top-tier conference dedicated to data compression (DCC, Snowbird, USA), showcasing expertise and recognition within the academic community.

Education

04/2023 ↑ 10/2019

Doctor of Philosophy

Artificial and Natural Intelligence Toulouse Institute (ANITI), France and Brown University, USA

Major: Artificial Intelligence/Computational Neuroscience

09/2019 ↑ 09/2017

Masters of Science

Erasmus Joint Masters with University of Bourgogne (France), University of Girona (Spain) and Heriot-Watt University (U.K.)

Major: Computer Vision and Robotics

05/2013 ↑ 08/2009

Bachelor of Technology

LNM Institute of Information Technology, India

Major: Electronics and Communication Engineering

Teaching

At Federal University of Toulouse Midi-Pyrènèes, France

- Introduction to Computer vision
- Visual Reasoning in Computer Vision
- Initiation to research work

Conference Talks

- *International Conference on Learning Representation* (ICLR), Rawanda
- *Geological Society of America*, Connects, Denver (USA)
- *Botany* (virtual)
- *Brown Unconference*, USA