Tushar Kataria

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Scientific Computing Institute | Kalhert School of Computing | Salt Lake City, Utah, USA

EDUCATION

University Of Utah   Utah, USA
PhD in Computing   *Current -Jan 2021*

Interests: Deep Learning, Medical Image Processing | Advisor: Prof. Shireen Y. Elhabian

Indian Institute of Technology, Bombay   Maharashtra, India
M.Tech. in Communication Engineering   *July 2017*

Thesis: Image Fusion Using Multi-resolution Algorithms | Advisor: Prof. V.M. Gadre, Electrical Engineering

AIACTR, GGSIPU (Renamed NSUT East Campus)   New Delhi, India
Bachelor of Technology in Electronics and Communication Engineering   *May 2013*

Projects: Fingerprint Recognition system based on Minutiae based matching and Acoustic Echo cancellation using Adaptive Algorithms | Advisor: Prof. Rashmi Gupta, ECE

JOB/INTERNSHIP EXPERIENCE

Johnson and Johnson Innovation   Boston, USA
Research Intern-Pathology Digital Imaging   *August 2024 - May 2024*

Cadence Design Systems IP Group formerly Tensilica   Pune, Maharashtra
Lead Design Engineer   *Dec 2020 -July 2019*
Design Engineer II   *June 2019 -July 2017*

Inovas Tech   New Delhi
Website Developer   *Feb 2014 - Aug 2013*

CONFERENCE PUBLICATIONS

- Khincha, Siddharth, **Tushar Kataria**, Ankita Anand, Dan Roth, and Vivek Gupta. "Leveraging LLM For Synchronizing Information Across Multilingual Tables." In Proceedings of the 2025 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics: Human Language Technologies (Volume 1: Long Papers), pp. 6474-6492. 2025.

- Shankarampeta, Abhilash, Harsh Mahajan, **Tushar Kataria**, Dan Roth, and Vivek Gupta. "TRANSIENTTABLES: Evaluating LLMs' Reasoning on Temporally Evolving Semi-structured Tables." In Proceedings of the 2025 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics: Human Language Technologies (Volume 1: Long Papers), pp. 6526-6544. 2025.

- Pandya, Pranshu, Vatsal Gupta, Agney S. Talwarr, **Tushar Kataria**, Vivek Gupta, and Dan Roth. "NTSEBENCH: Cognitive Reasoning Benchmark for Vision Language Models." In Findings of the Association for Computational Linguistics: NAACL 2025, pages 3680–3708, Albuquerque, New Mexico. Association for Computational Linguistics, 2025.

- Aziz, Abu Zahid Bin*, Mokshagna Sai Teja Karanam*, **Tushar Kataria**, and Shireen Y. Elhabian. "EFFICIENTMORPH: Parameter-Efficient Transformer-Based Architecture for 3D Image Registration." In 2025 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), pp. 1330-1341. IEEE, 2025.

- Gupta, Vatsal*, Pranshu Pandya*, **Tushar Kataria**, Vivek Gupta, and Dan Roth. "Evaluating Concurrent Robustness of Language Models Across Diverse Challenge Sets." *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing.*

- Nihalaani, Rachaell, **Tushar Kataria**, Jadie Adams, and Shireen Y. Elhabian. "Estimation and Analysis of Slice Propagation Uncertainty in 3D Anatomy Segmentation." *International Conference on Medical Image Computing and Computer-Assisted Intervention 2024.*

- Ukey Janmesh, **Tushar Kataria**, and Shireen Y. Elhabian.   "MASSM: An End-to-End Deep Learning Framework for Multi-Anatomy Statistical Shape Modeling Directly From Images." *International Workshop on Shape in Medical Imaging 2024, MICCAI 2024.*

- **Kataria, Tushar**, Beatrice Knudsen, and Shireen Y. Elhabian..   "Unsupervised Domain Adaptation For Semantic Segmentation Under Target Data Scarcity." *2024 IEEE International Symposium on Biomedical Imaging (ISBI).*

- Dubey, Shikha, **Tushar Kataria**, Beatrice Knudsen, and Shireen Y. Elhabian. "Structural Cycle GAN for Virtual Immunohistochemistry Staining of Gland Markers in the Colon." *International Workshop on Machine Learning in Medical Imaging. Cham: Springer Nature Switzerland, MICCAI 2023.*

- **Kataria, Tushar**, Beatrice Knudsen, and Shireen Y. Elhabian. "To pretrain or not to pretrain? A case study of domain-specific pretraining for semantic segmentation in histopathology." *Workshop on Medical Image Learning with Limited and Noisy Data. Cham: Springer Nature Switzerland, MICCAI 2023.*

- Karanam, Mokshagna Sai Teja, **Tushar Kataria**, Krithika Iyer and Shireen Y. Elhabian.. "ADASSM: Adversarial Data Augmentation in Statistical Shape Models From Images." *International Workshop on Shape in Medical Imaging. Cham: Springer Nature Switzerland, MICCAI 2023.*

- Khincha, Siddharth, Chelsi Jain, Vivek Gupta*, **Tushar Kataria***, and Shuo Zhang. . "InfoSync: Information Synchronization across Multilingual Semi-structured Tables." *Findings of the Association for Computational Linguistics: ACL 2023. 2536–2559*

- Hall, Mary, Ganesh Gopalakrishnan, Eric Eide, Johanna Cohoon, Jeff Phillips, Mu Zhang, Shireen Elhabian, Aditya Bhaskara, Harvey Dam, Artem Yadrov, **Tushar Kataria**, Amir Mohammad Tavakkoli, Sameeran Joshi, Mokshagna Sai Teja Karanam. "An NSF REU Site Based on Trust and Reproducibility of Intelligent Computation: Experience Report.", *In Proceedings of the SC'23 Workshops of The International Conference on High Performance Computing, Network, Storage, and Analysis, pp. 343-349. 2023.*

- Vanmali, Ashish V., **Tushar Kataria**, Samrudhha G. Kelkar, and Vikram M. Gadre. "Analysis of Ringing Artifact in Image Fusion Using Directional Wavelet Transforms", *IJERT Nov 2020*

- Patel, Nikunj* and **Kataria, Tushar*** . "Image hallucination at different times of day using locally affine model and kNN template matching from time-lapse images." *In Proceedings of the Tenth Indian Conference on Computer Vision, Graphics and Image Processing, pp. 1-8. 2016.*

JOURNAL PUBLICATIONS

- **Kataria, Tushar**, Saradha Rajamani, Abdul Bari Ayubi, Mary Bronner, Jolanta Jedrzkiewicz, Beatrice Knudsen, and Shireen Y. Elhabian. "Automating Ground Truth Annotations For Gland Segmentation Through Immunohistochemistry." *Modern Pathology 36.12 2023.*

- Vanmali, Ashish V., **Tushar Kataria**, Samrudha G. Kelkar, and Vikram M. Gadre.   "Ringing artifacts in wavelet based image fusion: Analysis, measurement and remedies." *Information Fusion 56 (2020): 39-69.*

ARCHIVED PUBLICATIONS

- **Kataria, Tushar**, and Shireen Y. Elhabian..   "BoundarySeg: An Embarrassingly Simple Method To Boost Medical Image Segmentation Performance for Low Data Regimes." arXiv e-prints (2025): arXiv-2505.

- **Kataria, Tushar**, Beatrice Knudsen, and Shireen Y. Elhabian..   "ImplicitStainer: Data-Efficient Medical Image Translation for Virtual Antibody-based Tissue Staining Using Local Implicit Functions." arXiv e-prints (2025): arXiv-2505.

- **Kataria, Tushar**, Beatrice Knudsen, and Shireen Y. Elhabian. "StainDiffuser: MultiTask Dual Diffusion Model for Virtual Staining." arXiv preprint arXiv:2403.11340 (2024)

- **Khan, Amsa**,**Tushar Kataria**, Janmesh Ukey, and Shireen Y. Elhabian . "On the Viability of Semi-Supervised Segmentation Methods for Statistical Shape Modeling" arXiv preprint arXiv:2407.15260 (2024).

Teaching/Mentoring Experience

- **REU Summer 2025**, University of Utah. Delivered Two lectures on Image Processing and Machine learning for REU students.

- **REU Summer 2024**, University of Utah. Mentored two student projects comparing the performance of KAN and MLP on regression and classification tasks.

- **TA/TM, CS7640 Spring 2024**, Advanced Image Processing, Kalhert School of Computing, University of Utah, Instructor :- Prof. Shireen Y. Elhabian. Contributed to grading, designing course assignments, and mentoring students on class projects.

- **REU Summer 2023**, University of Utah. Mentored projects by 3 students on Digital pathology and SSM.

- **TA/TM, CS4640 Fall 2022**, Introduction to Image Processing, Kalhert School of Computing, University of Utah, Instructor :- Prof. Shireen Y. Elhabian

- **TA/TM, CS6640 Fall 2021**, Image Processing, Kalhert School of Computing, University of Utah, Instructor :- Prof Ross Whitaker

- **Lab Teaching Assistant**, TIDSP lab, IIT Bombay
    - **EE352**(Digital Signal Processing Lab, undergraduate course)(Spring 2015,2016,2017), Instructors:- Prof. Rajbabu Velmurugan, Prof. Saravanan Vijayakumaran
    - **TA/TM, CS6640 Fall 2021**, Image Processing, Kalhert School of Computing, University of Utah, Instructor :- Prof Ross Whitaker

- **MATLAB Workshop for Research, 2016:** Conducted a two-day workshop on Application of wavelets in MATLAB at the College of Engineering (Ambajogai) for more than 80 participants including faculties, PhD and M. Tech. students from colleges around Maharashtra.

- **DSP Workshop(2017-2015):** Conducted multiple workshops for personnels in Mumbai Police, BARC and other TEQIP institutes on the usage of TI DSP kit 5515 in their work. Maharashtra.

Volunteering Experience

- **ACT Volunteer Tutor, Bennion Center, University of Utah :** Helping students with Maths, Science, and Reading at one of the Salt Lake City Public Libraries.   Sep 2024-Aug 2022

- **Social Responsibility Group, Cadence Designs System, Pune :** As a part of the social outreach program, I actively participated in selecting causes to assist, such as flood relief, care facilities for mentally challenged adults, care homes for adults with intellectual disabilities, and science education in rural areas. Volunteering for social outreach projects, creating new events centered around causes, promoting employee involvement, and other duties are also responsibilities.   Dec 2020 - July 2017

- **Volunteering for Leadership Development with Tech4Team in Collaboration with W.I.T.U., Uganda :** Part of team of 10 Cadence employees who went to Uganda to work with a local non-profit called Women in Technology, Uganda. We helped in building their first maker space, train their teachers on how to use 3D printing, virtual reality, electronics(BBC Microbit) and help in improving their entrepreneurship program.   Oct 2019 - Aug 2019

- **Ed Support Volunteer, MAD :** Taught Mathematics, Science, and English to orphanage students pursuing diploma programs at the university level, covering topics such as algebra, statistics, and related topics. Feb 2020 - Dec 2017

- **Volunteer Teacher, Abhyasika :** Provided weekly English and Math tutoring at the secondary grade level for students from economically disadvantaged backgrounds.   July 2017-Aug 2014

Awards

- **Amul Vidya Bhusan Award, 2009::** Secured 1st position in Higher Secondary Examination.
- **Joint CSIR-UGC, 2014:** : Secured 29th Rank in the examination
- **Graduate Aptitude Test in Engineering, 2014::** Achieved an All India Rank of 229, placing in the 99.8th percentile out of approximately 2.16 Lakh candidates.

Skills

- **Tools**: MATLAB, Git, DreamWeaver, Code Composer Studio, Rstudio, Visual Studio, Jupyter
- **Languages**: C, C++, python, SQL, R, Bash, Makefile
- **Deep Learning Libraries**: PyTorch, Tensorflow, Keras, Numpy
- **Hobbies**: Reading, Swimming, Pottery, Handbuild Ceramics, Painting, Golf, Sking