

# Tushar Kataria

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

## EDUCATION

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### University Of Utah

*PhD in Computing*

Utah, USA

Current -Jan 2021

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

**Emphasis:** Medical image processing, deep learning, semantic & instance segmentation, domain adaptation, multimodal learning, conditional image generation, Virtual Staining, 3D volume registration.

### Indian Institute of Technology, Bombay

*M.Tech. in Communication Engineering*

Maharashtra, India

July 2017

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

### AIACTR, GGSIPU (Renamed NSUT East Campus)

*Bachelor of Technology in Electronics and Communication Engineering*

New Delhi, India

May 2013

## JOB/INTERNSHIP EXPERIENCE

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### Johnson and Johnson Innovation

*Research Intern-Pathology Digital Imaging*

Boston, USA(Remote)

August 2024 - May 2024

**Job Description:** Digital Pathology Imaging Analysis: Automated Annotations and Whole Slide Image (WSI)

Registration. Multi-Channel Immunofluorescence Imaging. Image Segmentation. Post Processing.

### Cadence Design Systems IP Group formerly Tensilica

Pune, Maharashtra

Dec 2020 -July 2019

*Lead Design Engineer*

*Design Engineer II*

June 2019 -July 2017

**Job Description:** Performance optimization of audio decoders and post processing modules on Cadence Tensilica DSP Cores. API development and integration into frameworks. Embedded Software Library Development.

## SKILLS

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- **Tools:** MATLAB, Git, Code Composer Studio, Rstudio, Visual Studio, Jupyter
- **Languages:** C, C++, python, SQL, R, Bash, Makefile, Embedded C, SIMD Optimization
- **Deep Learning Libraries:** PyTorch, Tensorflow, Keras, Numpy, Large Language model optimization and Prompting, Image Translation Research, Self Supervised Models, Benchmarking.
- **Hobbies:** Reading, Swimming, Pottery, Handbuild Ceramics, Painting, Golf, Skiing

## SELECTED PUBLICATIONS

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- **Kataria, Tushar**, Shikha Dubey, Mary Bronner, Jolanta Jedrzkiewicz, Ben J. Brintz, Shireen Y. Elhabian, and Beatrice S. Knudsen.. "Building Trust in Virtual Immunohistochemistry: Automated Assessment of Image Quality." arXiv preprint arXiv:2511.04615 (2025).
- **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.
- 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.
- **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).
- **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)*.
- **Kataria, Tushar**, Saradha Rajamani, Abdul Bari Ayubi, Mary Bronner, Jolanta Jedrziewicz, Beatrice Knudsen, and Shireen Y. Elhabian. "Automating Ground Truth Annotations For Gland Segmentation Through Immunohistochemistry." *Modern Pathology* 36.12 2023.
- 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*.
- 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*.
- 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.

## AWARDS

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- **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.

## VOLUNTEERING EXPERIENCE

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- **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