Kumar Ayush

Tech Lead
Google Deepmind

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| Google Scholar
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Education

Stanford University, CA, USA
Master of Science in Computer Science (**Distinction in Research**)
CGPA: 4.15/4.0
Thesis Advisors: Prof. Stefano Ermon and Prof. Marshall Burke (**Master's Thesis**)

Indian Institute of Technology, Kharagpur, India
Bachelor of Technology (Hons.) in Computer Science and Engineering
CGPA: 9.49/10.0
Thesis Advisor: Prof. Pabitra Mitra (**Best Bachelor's Thesis**)

Publications (Google Scholar)

Ongoing. "A Generalist Model for Wearable Health Sensing". (To be submitted to *Nature*).

Ongoing. "The Anatomy of a Personal Health Agent". (To be submitted to *Nature*).

Kumar Ayush*, Yuwei Zhang*, Siyuan Qiao, A. Ali Heydari, Girish Narayanswamy, Maxwell A Xu, Ahmed Metwally, Jinhua Xu, Jake Garrison, Xuhai Xu, Tim Althoff, Yun Liu, Pushmeet Kohli, Mark Malhotra, Shwetak Patel, Celilia Mascolo, Xin Liu, Daniel McDuff, Yuzhe Yang. "SensorLM: Learning the Language of Wearable Sensors". (pdf, Submitted to *Neurips* 2025). (*equal contrib.)

Maxwell A Xu*, Girish Narayanswamy*, **Kumar Ayush**, Dimitris Spathis, Shun Liao, Shyam A. Tailor, Ahmed Metwally, A. Ali Heydari, Yuwei Zhang, Jake Garrison, Samy Abdel-Ghaffar, Xuhai Xu, Ken Gu, Jacob Sunshine, Ming-Zher Poh, Yun Liu, Tim Althoff, Shrikanth Narayanan, Pushmeet Kohli, Yuzhe Yang, Mark Malhotra, Shwetak Patel, James Matthew Rehg, Xin Liu, Daniel McDuff. "Self-supervised Learning for Incomplete Multimodal Wearable Sensor Data". (pdf, Submitted to *Neurips* 2025). (*equal contrib.)

Ken Gu, Zhihan Zhang, Kate Lin, Yuwei Zhang, Akshay Paruchuri, Hong Yu, Mehran Kazemi, **Kumar Ayush**, A. Ali Heydari, Maxwell A Xu, Yun Liu, Ming-Zher Poh, Yuzhe Yang, Mark Malhotra, Shwetak Patel, Hamid Palangi, Xuhai Xu, Daniel McDuff, Tim Althoff, Xin Liu "RADAR: Benchmarking Language Models on Imperfect Tabular Data". (pdf, dataset, , Submitted to *Neurips* 2025). (*equal contrib.)

Jaedong Hwang*, Kumar Tanmay*, Seok-Jin Lee, Ayush Agrawal, Hamid Palangi, **Kumar Ayush**, Ila R Fiete, Paul Pu Liang. "Learn Globally, Speak Locally: Bridging the Gaps in Multilingual Reasoning". (Submitted to *Neurips* 2025). (*equal contrib.)

Kumar Tanmay*, Ayush Agrawal*, Tushar Aggarwal*, Hamid Palangi, **Kumar Ayush**, Paul Pu Liang. "Language Models' Factuality Depends on the Language of Inquiry". (pdf, Submitted to *EMNLP* 2025). (*equal contrib.)

Vidya Srinivas, Xuhai Xu, Xin Liu, **Kumar Ayush**, Isaac Galatzer-Levy, Shwetak Patel, Daniel McDuff, Tim Althoff. "Substance over style: Evaluating Proactive Conversational Coaching Agents". *ACL*. 2025 (pdf).

Girish Narayanswamy*, Xin Liu*, **Kumar Ayush**, Yuzhe Yang, Xuhai Xu, Shun Liao, Jake Garrison, Shyam Tailor, Jake Sunshine, Yun Liu, Tim Althoff, Shrikanth Narayanan, Pushmeet Kohli, Jiening Zhan, Mark Malhotra, Shwetak Patel, Samy Abdel-Ghaffar, Daniel McDuff. "Scaling Wearable Foundation Models". *ICLR*. 2025. (pdf, Google AI blog) (*equal contrib.)

Mike A. Merrill, Akshay Paruchuri, Naghmeh Rezaei, Geza Kovacs, Javier Perez, Yun Liu, Erik Schenck, Nova Hammerquist, Jake Sunshine, Shyam Tailor, **Kumar Ayush**, Hao-Wei Su, Qian He, Cory McLean, Mark Malhotra, Shwetak Patel, Jiening Zhan, Tim Althoff, Daniel McDuff, Xin Liu. "Transforming Wearable Data into Health Insights using Large Language Model Agents". (Submitted to Nature Communcations, pdf, Google AI blog)

Kumar Ayush*, Abhishek Sinha*, Jiaming Song*, Yutong He, Stefano Ermon. "Flexible Distribution Shift and Outlier Detection with Self-Supervised Kernels". (Preprint, pdf) (*equal contrib.)

Seungjae Lee, Yen-Chung Chen, **Kumar Ayush (Part of FCA Consortium)**, Austin E. Gillen, J. Matthew Taliaferro, Bart Deplancke, Hongjie Li, Eric C. Lai. "Diverse cell-specific patterns of alternative polyadenylation in Drosophila". (*Nature Communications*, pdf)

Hongjie Li, ..., **Kumar Ayush (Part of FCA Consortium)**, ..., Stein Aerts. "Fly Cell Atlas: a single-cell transcriptomic atlas of the adult fruit fly". (*Science Journal*, Webpage, bioarxiv, *Science* article)

Shuvam Chakraborty, **Kumar Ayush***, Burak Uzkent*, Kumar Tanmay, Evan Sheehan, Stefano Ermon. "Efficient Conditional Pre-training for Transfer Learning". *CVPR L3D-IVU*. 2022. (Workshop, pdf) (*equal contrib.)

Kumar Ayush*, Burak Uzkent*, Chenlin Meng*, Kumar Tanmay, Marshall Burke, David Lobell, Stefano Ermon. "Geography-Aware Self-Supervised Learning". *ICCV*. 2021. (Webpage, Poster, pdf,) (*equal contrib.)

Kumar Ayush*, Abhishek Sinha*, Jiaming Song*, Burak Uzkent, Hongxia Jin, Stefano Ermon. "Negative Data Augmentation". *ICLR*. 2021. (Poster, pdf) (*equal contrib.)

Kumar Ayush*, Burak Uzkent*, Kumar Tanmay, Marshall Burke, David Lobell, Stefano Ermon. "Efficient Poverty Mapping from High Resolution Remote Sensing Images". *AAAI*. 2021. (Oral, pdf) (*equal contrib.)

Kumar Ayush*, Burak Uzkent*, Marshall Burke, David Lobell, Stefano Ermon. "Generating Interpretable Poverty Maps using Object Detection in Satellite Images". *IJCAI*. 2020. (Poster, pdf) (*equal contrib.)

Kumar Ayush*, Anirudh Singhal*, Utkarsh Patel*, Ayush Chopra*, Balaji K. "Towards a Unified Framework for Fashion Compatibility and Outfit Recommendation". *WACV*. 2020. (Poster, pdf) (*equal contrib.)

Kumar Ayush*, Surgan Jandial*, Ayush Chopra*, Mayur Hemani, Abhijeet Halwai, Balaji K. "SieveNet: A Unified Framework for Robust Image-Based Virtual Try-On". *WACV*. 2020. (Poster, pdf, received media attention, Adobe Blog) (also at AI for Content Creation Workshop, *CVPR* 2020) (*equal contrib.)

Kumar Ayush*, Surgan Jandial*, Ayush Chopra*, Balaji K. "Powering Virtual Try-On via Auxiliary Human Segmentation Learning". *Second Workshop on Computer Vision for Fashion, Art and Design - ICCV*. 2019. (Workshop, pdf) (*equal contrib.)

Kumar Ayush*, Kumar Tanmay*. "Augmented Reality Based Recommendations based on Perceptual Shape Style Compatibility with Objects in the Viewpoint and Color Compatibility with the Background". *Advances in Image Manipulation Workshop (AIM) - ICCV*. 2019. (Workshop, pdf) (*equal contrib.)

Kumar Ayush*, Surgan Jandial*, Ayush Chopra*, Mayur Hemani, Balaji K. "Robust Cloth Warping via Multi-Scale Patch Adversarial Loss for Virtual Try-On Framework". *10th International Workshop on Human Behaviour Understanding (HBU) - ICCV*. 2019. (Workshop, pdf) (*equal contrib.)

Kumar Ayush. "Context Aware Recommendations Embedded in Augmented Viewpoint to Retarget Consumers in v-commerce". *Third Workshop on Computer Vision for AR/VR - CVPR*. 2019. (Workshop, pdf)

Kumar Ayush*, Abhishek Sinha*. "Improving Classification Performance of Support Vector Machines via Guided Custom Kernel Search". *The Genetic and Evolutionary Computation Conference (ACM GECCO)*. 2019. (Poster, pdf,) (*equal contrib.)

Ayush Chopra, Abhishek Sinha, Hiresh Gupta, Mausoom Sarkar, **Kumar Ayush**, Balaji K. "Powering Robust Fashion Retrieval with Information Rich Feature Embeddings". *Understanding Subjective Attributes of Data: Focus on Fashion and Subjective Search Workshop - CVPR*. 2019. (Workshop, Best Paper, pdf)

Kumar Ayush*, Abhishek Sinha*. "Towards Mathematical Reasoning: A Multimodal Deep Learning Approach". *25th IEEE International Conference on Image Processing (ICIP)*. 2018. (Poster, pdf, slides,) (*equal contrib.)

Kumar Ayush, Raja Karamakar, Varun Rawal, Pradyumna K. Bishoyi, Samiran Chattopadhyay, Sandip Chakraborty. "Supporting Throughput Fairness in IEEE 802.11ac Dynamic Bandwidth Channel Access: A Hybrid Approach". *42nd IEEE Conference on Local Computer Networks (LCN)*. 2017. (Oral, pdf, slides)

Gaurush Hiranandani, **Kumar Ayush**, Atanu R Sinha, Sai Varun Reddy Maram, Chinnaobireddy Varsha, Pranav Maneriker. "Enhanced Personalized Targeting using Augmented Reality". *16th IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*. 2017. (Poster, pdf)

Avisek Lahiri, **Kumar Ayush**, Prabir Kumar Biswas, Pabitra Mitra. "Generative Adversarial Learning for Reducing Manual Annotation in Semantic Segmentation on Large Scale Microscopy Images: Automated Vessel Segmentation in Retinal Fundus Image as Test Case". *Computer Vision for Microscopy Image Analysis (CVMI) Workshop - CVPR*. 2017. (Workshop, pdf, slides,).

Srinivas S. S. Kruthiventi, **Kumar Ayush**, R. Venkatesh Babu. "DeepFix: A Fully Convolutional Neural Network for predicting Human Eye Fixations". *IEEE Transactions on Image Processing*. 2017. (Journal, pdf, slides).

Mayank Singh, Barnopriya Barua, Priyank Palod, Sidhartha Satapathy, Samuel Bushi, **Kumar Ayush**, Krishna Sai Rohith, Tulasi Gamidi, Pawan Goyal, Animesh Mukherjee. "OCR++: A Robust Framework For Information Extraction from Scholarly Articles". *26th International Conference on Computational Linguistics (Coling)*. 2016. (Poster, pdf, framework)

Patents

Kumar Ayush, Maria Lyubimsteva, Zihan Xu, Desmond Kamas, Hemang Mehta, Vitalii Dziuba, Ed Chang. "Machine Learning Models for Mapping Between Image Sensor Color Patterns". *GP-307568-00-PCT*. (Filed)

Kumar Ayush*, Stanley Chen*, Joa Lerman*, Zihan Xu*, Maria Lyubimtseva*, Ed Chang, Andrey Yatsunenko, Katrina Passarella, Jwalant Bhatt, David Tian, Desmond Kamas, Hemang Mehta, Gerardo Carranza, Vitalii Dziuba. "Learning-based Camera Auto-Focus Prediction for Sparse Phase Detection Imaging Sensors". *PCT/US23/17752*. (Filed) (*equal contrib.)

Kumar Ayush, Harnish Lakhani, Atishay Jain. "Video Retrieval Based on Encoding Temporal Relationships Among Video Frames". *US 11,238,093*. (Published)

Kumar Ayush, Ayush Chopra, Utkarsh Patel, Balaji K, Anirudh Singhal. "Deep Learning based Visual Compatibility Prediction for Bundle Recommendations". *US 18/186,528*. (Published)

Kumar Ayush, Harnish Lakhani, Atishay Jain. "Video Retrieval Using Temporal Video Content". *US 16/601,773*. (Published)

Kumar Ayush, Harnish Lakhani, Atishay Jain. "Machine Learning Predictions of Recommended Products in Augmented Reality Environments. *US 16/675,606*. (Published)

Kumar Ayush, Atishay Jain, Harnish Lakhani. "Augmented Viewpoint Driven Bundle Recommendation in Virtual Commerce". *US 17/654,885*. (Filed)

Kumar Ayush, Surgan Jandial, Ayush Chopra, Mayur Hemani, Balaji K. "Accurately Generating Virtual Try-On Images Utilizing a Unified Neural Network Framework". *US 11,030,782*. (Published)

Kumar Ayush, Surgan Jandial, Ayush Chopra, Mayur Hemani, Balaji K. "Cloth warping using multi-scale patch adversarial loss". *US 11,080,817* (Published)

Kumar Ayush, Atishay Jain. "Center-Biased Machine Learning Techniques to Determine Saliency in Digital Images". *US 11,663,463*. (Published)

Kumar Ayush*, Abhishek Sinha*, Ayush Chopra*, Hiresh Gupta*, Mausoom Sarkar*, Balaji K. "Performance of Neural Networks Using Learned Specialized Transformation Functions". *US 16/534,856*. (Published) (*equal contrib.)

Kumar Ayush, Harnish Lakhani, Atishay Jain. "Compatibility Based Identification of Incompatible Products in Digital Representations of Real-World Environments". *US 10,984,467*. (Published)

Kumar Ayush, Harsh Vardhan Chopra. "Automatic Generation of Context-Aware Composite Images". *US 11,158,100*. (Published)

Kumar Ayush, Gaurush Hiranandani. "Generating and Providing Augmented Reality Representations of Recommended Products Based on Style Compatibility in Relation to Real-World Surroundings". *US 10,789,622*. (Published)

Kumar Ayush, Gaurush Hiranandani. "Generating and Providing Augmented Reality Representations of Recommended Products Based on Style Similarity in Relation to Real-World Surroundings". *US 10,956,967*. (Published)

Gaurush Hiranandani, **Kumar Ayush**, Sai Varun Maram Reddy, Chinnaobireddy Varsha, Siddhant Jain. "Creating Personalized Catalogues with Recommendations Embedded in Augmented Viewpoint to Retarget Consumers". *AU 2017216603*. (Published)

Gaurush Hiranandani, Sai Varun Reddy Maram, **Kumar Ayush**, Chinnaobireddy Varsha, Siddhant Jain. "Method, Medium, and System for Product Recommendations based on Augmented Reality Viewpoints. *US 10,475,103*. (Published)

Gaurush Hiranandani, **Kumar Ayush**, Chinnaobireddy Varsha, Sai Varun Maram Reddy. "Creating Targeted Content based on Detected Characteristics of an Augmented Reality Scene". *US 10,922,716*. (Published)

Gaurush Hiranandani, Sai Varun Maram Reddy, **Kumar Ayush**, Chinnaobireddy Varsha, Siddhant Jain. "Product Recommendations Based on Augmented Reality Viewpoints". *US 2018/0121988*. (Published)

Gaurush Hiranandani, Chinnaobireddy Varsha, Sai Varun Maram Reddy, **Kumar Ayush**, Atanu R Sinha. "Identifying Augmented Reality Visuals Influencing User Behavior in Virtual-Commerce Environments". *US 10,163,269*. (Published)

Work Experience

Google Deepmind and Research, Mountain View, USA
Tech Lead Sep 2021 - Present

- *Gemini*: Post-training, multi-modality, auto-rater/auto-critique/auto-user/user-simulator, modeling human attention/behavior/feedback/interaction
- *Health AI Foundation Models*: Worked on multimodal foundation models to catalyze the adoption of human-centered AI in health by developing a Personalized Health Models (self-supervised learning, multimodal learning) and Agents for Consumers using physiological signals from wearables like Pixel watches, and Fitbits.
- *Tele Camera Improvements*: Developed a light-weight neural network model for achieving high-quality tele camera images at 30x. Developed novel algorithms to perform reconstruction in bayer domain improving IQ: noise-reduction, sharpness improvement and (color and shape) artifacts reduction. *A patent has been filed.*
- *Thin Lens Imaging*: Developed a neural feature-based image reconstruction method for achieving high-quality, full-color, wide FOV reconstructions corrected for chromatic aberrations for low TTL lenses.
- *Camera Autofocus*: Pixel Phones use a combination of PDAF and CAF to autofocus. PDAF is faster but less accurate and CAF is slower but more accurate. Worked on 1) building an accurate and efficient ML based PDAF algorithm for sparse phase detection imaging sensors that can generalize well for all scenarios, and 2) running the model on Google's specialized on-device ML accelerator on Pixel 7 for fast and accurate predictions. *A patent has been filed.*

Stanford University, CA, USA
Graduate Research Assistant in Ermon Group (Master's Thesis) Sep 2019 - Jun 2021

- Worked with Prof. Stefano Ermon on Computational Sustainability (w/ Prof. Marshall Burke), Data Augmentation, Self-Supervised Representation Learning and Generative Models.
- Worked to apply satellite imagery to socioeconomic, computational sustainability, and computer vision tasks. One paper *accepted at IJCAI 2020*. One paper *accepted at AAAI 2021*. One paper *accepted at ICCV 2021*.
- Developed a negative data-augmentation technique to improve performance across tasks like GANs, representation learning in images and videos. *Accepted at ICLR 2021*.
- Investigated smarter and efficient ways to transfer learn. *Accepted at CVPR 2022*.
- Used self-supervised learning for distribution shift and outlier detection. *Under Review*.

Graduate Research Assistant in SNAP Group Mar 2021 - Jun 2021

- Worked with Prof. Jure Leskovec on integrating and annotating Fly Cell Atlas (a large-scale single-cell transcriptomic dataset of fly) obtained from two different technologies.
- Performed an in-depth benchmark study on available batch correction methods to determine the most suitable method for batch-effect removal for Fly Cell Atlas. Investigated annotation transfer across datasets to alleviate tedious manual annotation process. Work accepted in *Science* and *Nature Communications*.

Adobe Inc., Noida, India
Senior Member of Technical Staff (Media and Data Science Research) Sep 2018 - August 2019

- Two Major Projects: (a) Image-based virtual try-on for fashion garments (*two accepted papers in ICCV 2019 Workshops, one paper accepted in CVPR 2020 Workshop, one paper accepted in WACV 2020*), (b) Fashion Compatibility and Outfit Recommendation using Graph Neural Networks (*one paper accepted in WACV 2020*). Achieved state-of-the-art performance in both works.
- Worked on enhancing digital experience in AR-based retail apps. *Two workshop papers in CVPR and ICCV. Two patents published.*
- Worked on visual content based video retrieval on natural language query. Proposed an end-to-end neural network based embedding model for projection of videos and sentences to a joint embedding space. *A patent is published.*

Senior Member of Technical Staff (Photoshop Elements and Adobe Stock) Jan 2018 - Aug 2018

- Developed a Neural Network based technology for Modeling the Sellability of Adobe Stock Images.
- Worked on Creative Cloud Bots for Slack and Microsoft Teams in Node.js
- Implemented a VQA model for solving mathematical equations from images. *Published in IEEE ICIP 2018*.
- Proposed and worked on improving product recommendations in AR-based retail apps using state-of-the-art computer vision and machine learning techniques. *Multiple international patents published.*
- Proposed and developed a method for background scene recommendation for 3D objects in Adobe Dimension CC using scene compatibility, theme compatibility, and automated image matching. *A patent is published.*

Member of Technical Staff (Photoshop Elements and Adobe Stock) Jun 2017 - Dec 2017

- Created a service using a Deep Learning Based Object Detection Method to provide Object Proposals for automatic mask selection in Nimbus (Adobe's cloud-based Lightroom-style photo editor).
- Primary developer for Adobe Stock Add-on for Wordpress in PHP. Worked on Creative Cloud Bot for Slack in Node.js
- Created an Intelligent Stock Plugin for Google Slides as part of the Adobe Stock Hackathon. Used NLP techniques to automatically construct queries from an author's content to be used for retrieving relevant assets from Adobe Stock.

Internship Experience

Fyusion Inc., San Francisco, CA
Multi-View Object Segmentation (Computer Vision Research Intern) Summer 2020
Advisor: Aidas Liaudanskas [Proprietary]

Worked on the problem of object segmentation in multiple views when two or more viewpoints of the same scene are available. Used a UNet and a bidirectional convolutional LSTM to propagate segmentation coherence information in both space and time. Implemented a multi-view version of PointRend to sample uncertain points from multiple views leading to an improved segmentation of the central frame.

Big Data Experience Lab, Adobe Research, Bangalore, India
Enhanced Digital Marketing using Augmented Reality Summer 2016
Advisors: Gaurush Hiranandani and Dr. Atanu R Sinha [PDF | Slides]

Analyzed consumer interactions on AR-based retail apps to identify the preferred purchase viewpoint. Created personalized catalogues with recommendations, based on style similarity and theme compatibility, embedded in the viewpoint visual. Devised a graph-based approach for automatic generation of personalized email content for the catalogue. *Three international patents published. Work published in IEEE ISMAR 2017.*

Video Analytics Lab, Indian Institute of Science, Bangalore, India
DeepFix: A Fully Convolutional Neural Network for predicting Human Eye Fixations Summer 2015
Advisor: Prof. R. Venkatesh Babu [PDF | Slides]

Implemented a neural network for saliency prediction. Utilized the potential of inception modules, filters with holes, and location-biased convolutional filters. *Work published in IEEE Transactions on Image Processing. Winner of Saliency Prediction task at LSUN 2016, organized by Princeton University and CVPR 2016.*

Undergraduate Research (Selected Projects)

Bachelor's Thesis, Indian Institute of Technology, Kharagpur, India **(Best Thesis Award)**
Generative Adversarial Learning for Reducing Manual Annotation in Semantic Segmentation on Large Scale Microscopy Images Spring 2017
Advisor: Prof. Pabitra Mitra [PDF | Slides]

Leveraged GAN for semi-supervised learning on large scale fundus imaging modality for automated blood vessel segmentation. Achieved comparable performance (sometimes even better) with recent CNN based segmentation techniques while using upto 9X less training data. *Work published in Computer Vision for Microscopy Image Analysis (CVMI) Workshop - CVPR 2017.*

Indian Institute of Technology, Kharagpur, India
Supporting Throughput Fairness in IEEE 802.11ac Dynamic Bandwidth Channel Access: A Hybrid Approach Autumn 2016
Advisor: Prof. Sandip Chakraborty [PDF | Slides]

Performed a literary survey pertaining to unfairness in IEEE 802.11ac Dynamic Bandwidth Channel Access and proposed a hybrid adaptive resource reservation mechanism for supporting fair channel access in DBCA. A polling based online learning mechanism is designed to avoid starvation of primary channel users. Achieved significantly better performance compared to DBCA. *Work published in IEEE LCN 2017 (Oral Paper).*

Indian Institute of Technology, Kharagpur, India **(Best Project Award)**
OCR++: A Robust Framework For Information Extraction from Scholarly Articles Autumn 2015
Advisor: Prof. Pawan Goyal and Prof. Animesh Mukherjee [PDF | Project]

Worked with a team on the development of a framework designed for a variety of information extraction tasks from scholarly articles using CRF models and generic patterns. Conducted extensive evaluations to compare OCR++ and state-of-the-art systems, showing significant improvement in each of the retrieval tasks along

with fast implementation speed-ups and batch processing functionality. *Work published in Coling 2016.*

Awards and Achievements

Distinction in Research - MSCS @ Stanford 2021
Received Distinction in Research for my Master's Thesis (pdf) on Combining Machine Learning and Satellite Imagery for Sustainability Challenges.

Best Paper - FFSS-USAD @ CVPR 2019 2019
Our work on fashion retrieval received best paper award at IEEE CVPR Workshop FFSS-USAD.

Best Bachelor's Thesis Award - IIT Kharagpur 2017
Awarded in a batch of 105 students in the Dept. of Computer Science & Engg., IIT Kharagpur.

Gandhian Young Technological Innovation (GYTI) Award 2017
Awarded for OCR++ by SRISTI at Rashtrapati Bhawan (Office of the President of India).

IBM Day @ IIT Kharagpur - System Demonstration Contest - Third Prize 2016
Awarded for OCR++ by IBM Research India from a pool of 20 submissions.

Saliency Prediction Winner - Large Scale Scene Understanding Challenge (LSUN) 2016
Our saliency model, DeepFix, won the 1st prize in LSUN, organized by Princeton University in conjunction with CVPR 2016.

Honda Young Engineer & Scientist's (Y-E-S) Fellowship Finalist 2016
Amongst 20 finalists from all over India.

Indian Academy of Sciences - Summer Research Fellowship 2015
Awarded for research internship at Indian Institute of Science, Bangalore.

Kamalavati Syngal and Goralal Syngal Memorial Scholarship 2014
Awarded for academic excellence at IIT Kharagpur.

Jagadish Bose National Science Talent Search (JBNSTS) Scholarship 2013
Awarded to 34 candidates from around 1000 applicants in the state of West Bengal for exceptional aptitude in basic sciences and research.

Kishore Vaigyanik Protsahan Yojana (KVPY) Scholarship 2013
Awarded to 1056 students from around 100,000 applicants by Dept. of Science and Technology, Govt. of India for exceptional aptitude in basic sciences.

Abhay Seva Sansthan Gold Medal 2013
Awarded for scoring 100% in Computer Science in ISC (12th grade) board examination.

S. P. Sinha Scholarship 2011
Awarded full scholarship for 11th & 12th grade due to outstanding performance (96.57%) in ICSE (10th grade) board examination.

Talks/Presentations

Geography-Aware Self-Supervised Learning [Slides - 1] Oct 2021
ICCV 2021

Efficient Poverty Mapping from High Resolution Remote Sensing Images [Slides - 1] Feb 2021
AAAI 2021

Saliency Prediction and its Applications in Vision and Design [Slides - 1] Feb 2019
Adobe Tech Summit, San Francisco, CA

Context Aware Personalized Product Recommendations in Virtual Commerce [Slides - 1, 2] Feb 2018
Adobe Inc., Noida, India

Technical Skills

Languages: Python, Familiarity with C++
Libraries: PyTorch, JAX, Numpy

Extra Curricular Activities and Professional Service

AI Instructor at InspiritAI (2021): Taught AI to high-school students in US (see here).

Reviewer for NeuRIPS, ICLR, CVPR, ECCV, WACV, International Journal of Computer Vision (Journal - Springer), Robotics and Autonomous Systems (Journal - Elsevier), Computer Vision and Image Understanding (Journal - Elsevier), Image and Vision Computing (Journal - Elsevier), Expert Systems with Applications (Journal - Elsevier).

Technovation Mentor for Youth Coding Initiative (2019): Mentored 5 high-school girls to build a business plan and mobile app to address a community problem.

Student Academic Mentor, Student Welfare Group, IIT Kharagpur (2015 - 2017): Looked after the orientation and guidance of 5 new students and undertook the initiative to motivate them for performing academically as well as in extra-curricular activities.

National Sports Organization (2013 - 2015): Involved in Athletics as a part of NSO, IIT Kharagpur for two years.