

Shivam Grover

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EDUCATION

Queen's University : 4.1 GPA

Master's of Applied Science in ECE (Field of Study in Artificial Intelligence)

Kingston

Sep. 2023 – Sep. 2025

Bharati Vidyapeeth's College of Engineering (GGSIPU): 8.13/10.0

Bachelor of Technology in Information Technology

New Delhi, India

Aug. 2017 – Jul. 2021

EXPERIENCE

Aeroleads, Software Development Engineer

May. 2021 – Aug. 2023

- Built and optimised an advanced database search page using Elastic Search for 650 Million records over 4 collections. ([Link](#))
- Built an Email Verifier API (used by 180,000 customers) from scratch and deployed it on heroku reducing the third-party cost overhead by over 5000\$ per month. Also optimized the email verification pipeline using a redis queue, improving overall server concurrency by 80% and eliminating timeout crashes. ([Link](#))
- Built a feature-rich email campaign product with Gmail API, currently used by 10,000 paid users. ([Link](#))
- Built a chrome extension for automating the collection of the contact details of 2500 LinkedIn profiles with a single click, currently being used by over 10,000 paid users. ([Link 1](#)) ([Link 2](#))

IIT Delhi, Undergraduate Research Assistant

May 2020 – Aug 2020

- Proposed and implemented a novel way to perform simultaneous realistic pose and appearance transfer in images of humans using conditional GANs. This had previously been unexplored. ([Link](#))
- Our cyclic consistency based objective functions ensures that the identity of the subject is retained in the generated images

Celestini Program (@IIT Delhi), Undergraduate Research Assistant

Jun. 2019 – Oct. 2019

- Built an android application which can predict the PM2.5 (air pollutant) value around you using a single image of that place using a DL model we trained
- Implemented on-device training to ensure no private data of our users is taken off of their devices and Federated Learning to improve the model's performance iteratively with our users' data while preserving their privacy
- We ensured Scene and Device generalisation by collecting a dataset of 10,000 images of 80+ locations using 15+ smartphones. We trained our model on HDR images to generalize the different post-processing techniques, and get a more accurate representation of the overall lighting of the place.

PUBLICATIONS

Shivam Grover, Amin Jalali, Ali Etemad, Segment, Shuffle, and Stitch: A Simple Mechanism for Improving Time-Series Representations", *Neural Information Processing Systems (NeurIPS)*, 2024.

Shivam Grover, Kshitij Sidana, Vanita Jain, "Improving Generalization for Geometric Variations in Images for Efficient Deep Learning", *Multimedia Tools and Applications*, 2023.

Shivam Grover, Kshitij Sidana, Vanita Jain, "Pipeline for 3D reconstruction of the human body from AR/VR headset mounted egocentric cameras", *arXiv:2111.05409 [cs.CV]*, 2022.

Vanita Jain, Qiming Wu, **Shivam Grover**, Kshitij Sidana, Gopal Chaudhary, San Hlaing Myint, Qiaozhi Hua, "Generating Bird's Eye View from Egocentric RGB Videos", *Wireless Communications and Mobile Computing*, vol. 2021.

AWARDS

Runner's up, Singapore India Hackathon

IIT Madras, 2019

- * Awarded by the Prime Minister of India and the former education minister of Singapore. It is a Hackathon organised by the Singaporean and Indian Government. ([Link](#))

2nd Position, Paul Baran's Young Scholar's Celestini Prize

IIT Delhi, 2019

- * Awarded by the ex-CTO of Motorola and Cisco, Mrs. Padmasree Warrior. The competition was organised by the Marconi Society. The poster submitted was the result of my 3 months research internship at IIT Delhi. ([Link](#))

1st Position, Software Edition of Smart India Hackathon

MHRD, 2019

- * This was a national level hackathon organised by AICTE and MHRD. I built an android application to aid e-vehicle charging operators in managing and maximizing their audience without compromising on the profits. ([Link](#))

1st Position, **Hardware Edition of Smart India Hackathon**

MHRD, 2019

- * This was a national level hackathon organised by AICTE and MHRD. We built a humanoid robot to help nurses do muscle intensive tasks like lifting and turning patients by mimicking the actions of the nurse that are identified from motion sensors embedded on the wearable vest. ([Link](#))

1st Position, **e-Yantra, Robotics and CV competition**

IIT Bombay, 2019

- * It is a national level competition organised by IIT Bombay and MHRD. ([Link](#))

PROJECTS

Spaced Out

Sep. 2019 – Mar. 2020

- * A 3D Rhythm game built with Unity and C. Used fast fourier transform to sync audio with the obstacles and objects in real time. ([Video](#))
- * Used blender to design and edit objects and backgrounds.

Simultaneous Pose and Appearance Transfer

Mar. 2020 – Dec. 2020

- * From an image of an object (for example a person), we transfer its pose and appearance to a target pose and appearance in a single go using a novel approach that uses conditional GANs and cyclic consistency for unsupervised learning.
- * I implemented this in python using **Keras for Tensorflow, OpenCV, Numpy**. ([Link](#))

3D Reconstruction from Egocentric Views

Sep. 2019 – Mar. 2020

- * A novel two-step approach for generating the 3D mesh and textures of the user mounted with an egocentric camera (for example, cameras under a VR headset). Uses a conditional GAN for translating the egocentric views into the third-person views and also for generating the texture maps. In terms of ability to generalize among different subjects, our system is the first of its kind. ([Link](#))

Visionair

Mar. 2020 – Dec. 2020

- * An android application that uses Deep Learning and Computer Vision to estimate the AQI around you accurately using a single image. Also uses Federated Learning to improve the model's performance while preserving the privacy of the users as the user base grows.
- * We trained the models on python and built the application in JAVA using **Tensorflow and OpenCV**. ([Link](#))

Humanoid Nurse

Jul. 2019 – Aug. 2019

- * A humanoid robot to help nurses do muscle intensive tasks like lifting and turning patients by mimicking the actions of the nurse that are identified from motion sensors embedded on the wearable vest.
- * I also built an android app for easy maneuvering of the bot. Accompanied with an android application for remotely controlling and tracking the bot. ([Link](#))
- * *Winner: Smart India Hackathon 2019 Hardware Edition*

Detection of used syringes in hospitals

Jul. 2019 – Present

- * A deep learning model that can detect used syringes from a camera feed and send alerts. Used along with a special type of syringe we invented which enables visual identification of usage.
- * Built a custom Syringe Cutter machine that logs the number of syringers properly destroyed and stores it onto the database. Also built an android application for the administrator that informs him about the number of syringes that have been dispatched and destroyed. ([Link](#))
- * *Awarded by the **Prime Minister of India**, Mr. Narendra Modi at SgIH 2019*

EasyCharge

Dec. 2018 – March. 2019

- * An android application to aid operators of e-vehicle charging stations in managing and maximizing their audience without compromising on the profits. Uses several parameters such as location, crowd, time and day, etc to dynamically suggest an optimal price. Used Firebase for backend. ([Link](#))
- * *Winner: Smart India Hackathon 2019 Software Edition*

Thirsty Crow

Sep. 2018 – May. 2019

- * An autonomous line following bot that uses a path following algorithm to traverse. I used graph to store build the arena within the code and using a modified version of the BFS I find the shortest path between the bot and 6 target objects that the bot visits one by one.
- * Using a camera at the top of the room, detects different objects and display animated models on them using augmented reality. ([Link](#))
- * *Winner: e-Yantra 2018 @ IIT Bombay*

TECHNICAL SKILLS

Languages: Python, Ruby on Rails, Java, JQuery, Javascript, HTML, SQL, Vue

Data Science Frameworks and Libraries: PyTorch, OpenCV, NumPy, Pandas, Matplotlib, Redis, Keras

Softwares: Android Studio, Unity3D, Blender, Adobe Photoshop

Skills: Image Processing, Full Stack Development, UI/UX, Data Processing, Elastic Search, Mongo DB, AWS