

# Shubham Gupta

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<https://linkedin.com/in/shubhamgupto> | <https://iamshubhamgupto.github.io>

## EDUCATION

### New York University

Master of Science in Computer Engineering

New York City, US

May 2024

- RA with M<sup>2</sup>Lines for Dr. Laure Zanna (2023). • RA with IBX Project for Dr. Elif Ensari (2023).

### PES University

Bachelor of Technology in Computer Science and Engineering

Bangalore, India

May 2022

- TA for Cloud Computing for Dr. Venkatesh Prasad (2022). • Winning team at MIT Challenge India (2020).

## PUBLICATIONS

**Gupta, Shubham**, et al. "Analysis and Application of Multispectral Data for Water Segmentation Using Machine Learning." Computer Vision and Machine Intelligence, Springer Nature Singapore, 2023, pp. 709–718. Crossref, doi:10.1007/978-981-19-7867-8\_56. [\[code\]](#) [\[slides\]](#)

**Gupta, S.**, et al. "WSSL: Weighted Self-Supervised Learning Framework for Image-Inpainting." Proceedings of the International Conferences Computer Graphics, Visualization, Computer Vision and Image Processing, Connected Smart Cities, Big Data Analytics, Data Mining and Computational Intelligence and Theory and Practice in Modern Computing 2022 ., edited by A. Abraham Xiao et al., IADIS Press., 2022, pp. 111–119. [\[code\]](#)

## TECHNICAL SKILLS

**Languages:** Python3, C++, Java, Javascript, Shell, Lucene, L<sup>A</sup>T<sub>E</sub>X

**Libraries:** PyTorch, Pytorch3D, OpenCV, Scikit-learn, Numpy, Pandas, Numba, PyRealSense2, Flask

**Frameworks:** ROS2, SpringBoot, Flutter, Hadoop, Elasticsearch, Jekyll, Hugo

**Databases:** SQL, Firebase, Redis

**Applications:** HPC, AWS, GCP, Docker, Grafana, QGIS, Github, Adobe Lightroom, Blender

## EXPERIENCE

### NYU Robomaster: Ultraviolet

Computer Vision Lead - Mentor: Chris DiMauro

September 2022 – Present

New York City, USA

- **Leading** a team of fifteen to train, optimize and deploy machine learning pipelines using HPC and Gitlab.
- Reduced inference latency by **40%** on **YOLOv5** using **TensorRT** deployed on **Jetson (aarch64)** and **x86** architecture using **Docker** Nvidia GPU Cloud (NGC) containers.
- Contributed to securing **5<sup>th</sup>** in the RoboMasters University League 2023 against twenty teams across the world.

### Aruba, a Hewlett Packard Enterprise company

Software Development Intern - Manager: Sachin Sanap

January 2022 – July 2022

Bangalore, India

- Constructed **SQL** queries and **SpringBoot APIs** to be used for visualizations for customers in production. The APIs provided insights on customer devices and apps usage patterns.
- Deployed an internal tool allowing developers to gain insights on the resources used by customers using **Grafana**, **SQL**, **Elasticsearch** and **Python3**.

### Indian Space Research Organization

Research Intern — Advisor: Dr. Hebbar R

August 2019 – April 2020

Bangalore, India

- **Published work** at the international conference of Computer Vision and Machine Intelligence (CVMI 2022).
- Developed a Sentinel-2 multispectral data pipeline using **SnaPy** and **GDAL** that was fully automated requiring **zero human annotation** for water bodies.
- Demonstrated DeeplabV3+ can achieve **0.92 mIoU** for water body segmentation using Sentinel-2 data of Bangalore lakes and transfer learning on PASCALVOC2012 dataset.

## PROJECTS

### Compressed Sensing | *Python3, Numpy, Github, JupyterBook*

2023

- Compressed Sensing on MRI data using **primal dual splitting algorithm** using random and equidistant masks.

### Leave Your Clothes Behind | *Python3, HPC, PyTorch, Blender*

2023

- Extract clothes from RGB videos using **SAM** and **COLMAP** to be used as 3D assets generated by **NeRF2Mesh**.