

Shubham Gupta

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EDUCATION

New York University

New York City, US

Master of Science in Computer Engineering

2022 - 2024

- GPA: 3.778/4.0
- Working under the Computer Vision subteam for the Robomaster Vertically Integrated Project.

PES University

Bangalore, India

Bachelor of Technology in Computer Science and Engineering

2018 - 2022

- GPA: 8.39/10.0
- Recipient of the Distinction Award Certificate(SGPA of 7.75 or higher) in Semesters I, II, IV, V, VI, VII, and VIII.
- Recipient of the MRD scholarship(top 20% of the department) in Semesters V and VI.
- Teaching Assitant for the core course UE19CS352 - cloud computing.
- Finsihed 3rd place in the Prakalpa Science Competition 19' for our work on Chladni Patterns.

Delhi Public School

Hyderabad, India

Central Board of Secondary Education, Science

2016 - 2018

- Percentage: 94.6
- Scored 99/100 in Informatic Practices, highest in the batch.
- Scored 97/100 in Chemistry, highest in the batch.

Ryan International School

Bangalore, India

Indian Certificate of Secondary Education, Science

2010 - 2016

- Percentage: 92.0
- Scored 100/100 in Computer Science, highest in the batch.

PUBLICATIONS

- **Gupta, Shubham**, D. Uma, and Ramachandra Hebbar. "Analysis and application of multispectral data for water segmentation using machine learning." arXiv e-prints (2022): arXiv-2212.[\[preprint\]](#) [\[code\]](#)
- **Gupta, S.**, Ravishankar, R. K., Gangaraju, M., Dwarkanath, P., & Subramanyam, N. (2022). WSSL: Weighted Self-Supervised Learning Framework for Image-Inpainting. In Y. Xiao, A. Abraham, G. Chao Peng & J. Roth (Eds.), 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 (pp.111-119). Lisbon, Portugal: IADIS Press. ISBN: 978-989-8704-42-9 [\[preprint\]](#) [\[code\]](#)

EXPERIENCE

Computer Vision recruit

September 2022 – Present

NYU Robomaster

New York City, USA

- Building the CI/CD pipeline for Computer Vision repository.
- Contributing to the detection and plate tracking algorithm.
- Working on code containerization and optimization using Tensor-rt.

Software Development Intern

January 2022 – July 2022

Aruba, a Hewlett Packard Enterprise company

Bangalore, India

- Worked with the IoT Operations team in Bengaluru under Sachin Sanap.
- Usage Dashboard: an internal tool allowing developers to gain insights on the resources used by customers using Grafana, SQL and Elasticsearch.
- Upgraded Debug Dashboard by providing a cleaner interface and more APIs.
- Upgraded Docker images and modules to reduce security vulnerabilities.

Teaching Assistant

PES University

January 2022 – June 2022

Bangalore, India

- TA for the course UE19CS352 Cloud Computing under the guidance of Professor Venkatesh Prasad.
- Responsible for creating and presenting slide decks and lab experiments.
- Developed Problem statement 3 for lab Hackathon.

Founder and CTO

CBeyond Technologies LLP

November 2021 – Present

Bangalore, India

- A company to make Computer Vision based SaaS solutions available to the general public.
- FacePass: We aim to provide a face authentication system as an alternative to fingerprint system. Our solution will focus on reducing contact surfaces for a more seamless authentication service.

Project Intern

Center for Cloud Computing and Big Data, PES University

June 2020 – July 2020

Bangalore, India

- Worked under Dr. K V Subramaniam.
- Developed an android app for monitoring and uploading health statistics of diabetic patients.
- Provided insights of steps per day, caloric burned and intake using Google Cloud Platform.
- Synced patient data on the cloud using realtime Firebase.

Research Intern

Regional Remote Sensing Center - South

July 2019 – April 2020

Bangalore, India

- Worked under Dr. Ramachandra Hebbar.
- Implemented land and water spectral indices to monitor land cover of Bangalore, India.
- Demonstrated a novel technique to annotate multi-spectral data and train neural networks.

Research Intern

Center for Data Science and Applied Machine Learning, PES University

June 2019 – July 2019

Bangalore, India

- Worked under Dr. Uma D.
- Developed a model to monitor open water bodies from aerial drone images.
- Won 1st place in one of the three internal hackathons conducted.
- Won 'L2' position for the final project demonstration.

PROJECTS

WSSL | *Python3, Tensorflow, Scikit-learn*

2022

- Undergraduate Thesis project at PESU done under Dr. S.Natarajan.
- Work demonstrates image reconstruction using a novel technique: Weighted Self Supervised Learning.

STAAC | *C++ STL, Python3*

2021

- An End Semester Project under the Generic Programming elective.
- Implemented a key-value data structure (splay tree) as a container which is compatible with C++ STL library.
- Compared the performance of Splay Tree to the inbuilt Map container for insertions and deletions.
- Compared the caching performance of Splay Tree to Map container and LRU-cache data structure.

FFT-Noise | *C, WebGL, Python3*

2021

- An Open Source project exploring procedural generation and noise algorithms.
- The project demonstrates noise generation is possible using Fast Fourier Transforms.
- Contributed to the 2D-Fast Fourier Transform function.
- Contributed to the testing scripts to compare with other noise functions

Iterators in C | *C*

2021

- An End Semester Project under the Design Patterns elective.
- Implemented a common Iterator object for three data structures: Arrays, Linked Lists and Binary Search Trees.
- The project demonstrates different types of Iterators available in C++, namely: Bidirectional Iterator and Random Access Iterator.
- The project makes use of Iterator and Strategy design patterns and Virtual tables to mimic classes from C++.

Javascript Mini-Compiler | *Lex, Yacc, C, Python3*

2021

- An End Semester Project for the Compiler Design course.
- The project implements the frontend of a compiler. The phases include: Tokenization, Abstract Syntax Tree Generation, Intermediate Code Generation and Code Optimization.
- The compiler has support to parse variable declaration and initialization, conditional statements, and looping statements.

Advanced Algorithms | *C*

2020

- A personal project implementing most algorithms learnt and the assignments submitted during the Advanced Algorithms elective.
- The project demonstrates concepts of Amortized Complexity, String matching algorithms, Number Theory and Dynamic Programming.

TECHNICAL SKILLS

Languages: C, C++, Python3, Java, Dart, Javascript

Databases: MySQL, Firebase

Frameworks: SpringBoot, Flutter, Hadoop

Libraries: Tensorflow, PyTorch, OpenCV, Scikit-learn, JDBC

Applications: AWS, GCP, SNAP, QGIS, Adobe Lightroom

LICENSES AND CERTIFICATION

Associate Cloud Engineer

December 2021

Google Cloud

Architecting with Google Compute Engine

May 2021

Google Cloud - Coursera

30 Days of Google Cloud

December 2020

Google Cloud

COMMUNITY

Member

August 2019 – June 2022

PIXELS Photography Club/PES University

Bangalore, India

- Photographer at The Hult Prize 19'.
- Photographer at Unity Workshop 20'.
- Photographer at OpenMic 20'.
- Photographer at CODS x IEEE-VIT 20'.
- Photographer and Videographer at Ninaada 20'.

Project Contributor

January 2021

Crio.do

Bangalore, India

- Converted one of my personal projects into a step-by-step guide for everyone to recreate.
- The project INTAL, addresses the shortage of a library in the C language that can handle BigIntegers like Java and C++.
- By the end of the project, developers will have an understanding of dynamic memory allocation, arithmetic manipulations of character arrays, and applications of BigIntegers.

Star Dev Creator

October 2020

Crio.do

Bangalore, India

- Recognition for my contributions towards Crio.Do's #IBelieveInDoing program.
- My contribution was officially recorded as part of my the HacktoberFest 2020 submissions.

Head of Android Development

August 2020 – May 2021

Google Developer Student Clubs/PES University

Bangalore, India

- Conducted the Android Study Jams 2021 for nearly 400 participants.
- Delivered three virtual sessions covering topics for the Associate Android Developer exam.
- Recognized as Campus Facilitator for conducting Android Study Jams 2021.

Community Service

August 2018

Bootstrap/PES University

Bangalore, India

- Prepped and painted walls of a Government school near the outskirts of Bangalore, India.

HACKATHONS

- Member of winning team Collective at the MIT Covid19 Challenge India:Track I.
- Participated as Team while(true); at the Aadhaar Hackathon 2021.
- Participated at the Galileo Hackathon 19'.
- Participated as Team DriveEZ at the HashCode 18'. Qualified as the top 40 teams.