

HIMANSHU GUPTA

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Education

University of Massachusetts, Amherst Feb 2021 – Dec 2022(Expected)
MS in Computer Science | CGPA - 4.0/4.0 *Amherst, Massachusetts*
Relevant Courses: Distributed OS, Network Security, Intelligent Visual Computing, Advanced NLP, Machine Learning

Indian Institute of Technology(BHU) Varanasi Aug 2013 – May 2017
B.Tech. in Electrical Engineering | CGPA - 8.87/10.0 *Varanasi, U.P.*
Relevant Courses: Artificial Intelligence, Computer Systems, Algorithm and Data Structure

Technical Skills

Languages and Databases: Python, Java, Javascript, HTML, CSS, Shell, SQL, PostgreSQL, MongoDB
Framework and Libraries: Flask, Django, SQLAlchemy, Boto, Pandas, Numpy, Scikit-learn, Pytorch, Scrum(Agile)
Technologies and Services: Linux, Git, Docker, AWS, Azure, RestAPI

Experience

Software Engineer | *Center of Youth Engagement, UMass(On-Campus Job)* May 2021 – Present
Python, Django, Javascript, FastAPI, Docker, SQLAlchemy, PostgreSQL *Amherst, MA*

- Designed and developed a data visualization and geospatial analytics web dashboard using **Django** and **Javascript**, hosted on AWS EC2 server, to help police officers efficiently track and filter crime incidents reported in Holyoke, MA.
- Automated the CICD pipeline for a case management web application system *Shannon*, by integrating Github actions with AWS Code deployment service to deploy dockerized Nginx server.

Software Engineer II | *Citrix R&D* July 2017 – Nov 2020
Python, Flask, Boto, Terraform, Docker, Shell, Jenkins, Jira, Git, PostgreSQL *Bangalore, India*

- Leveraged agile and test-driven development methodologies to develop **Flask** Rest APIs for provisioning micro-service, which involved automation for deploying and managing Citrix infra. across cloud environments like **AWS** and **Azure**.
- Devised a new architecture to perform autoscaling in distributed cluster system efficiently and robustly using the concept of cold node. Achieved **57% time performance improvement** in cluster scale out over previous architecture.
- Revamped the existing workflow to introduce the flexibility of retrying, halting and resuming cloud cluster provisioning and de-provisioning, and enhance user experience in case of any server/client fault.
- Reduced the overall cloud storage cost for the customers by automating the process of checking out Citrix (CICO) license as part of infrastructure deployment workflow.

Projects

Online Distributed Book Store Pygmy.com [🔗](#) | *Python, Flask, SQLite, Docker* May 2021

- Built a dockerized multi-tier web micro service application for users to search and buy books online.
- Incorporated push based in-memory caching, server replication and loadbalancing functionalities to improve average request processing latency by 30%. Also added fault tolerance and recovery mechanism to deal with server crashes.

Gradient Based 3D Mesh Style Transfer Using 2D Supervision [🔗](#) | *PyTorch, CUDA, Neural Renderer* May 2021

- Re-implemented and re-trained the existing Chainer based Neural Renderer (a neural network) using latest frameworks like Pytorch and CUDA to transfer style from 2d image to 3D object and edit the mesh accordingly.
- Experimented the style transfer using voxel, point cloud, and mesh based 3D representation and compared the results.

Unstructured P2P RMI Distributed Systems [🔗](#) | *Java, Shell, Linux* March 2021

- Lead a team of 3 members and designed a unstructured P2P network(*bazaar*), where each *buyer* node communicated by flooding buy requests in the network using JAVA RMI protocol to make a successful trade with the appropriate seller.

Real Time Text Detection Using Android [🔗](#) | *Python, OpenCV, Android* July 2016

- Developed a text searching application capable of locating text in real-time camera feeds by showing bounding boxes around the user searched text. Used MSER algorithm for text detection and Tesseract OCR for text recognition.
- Achieved 95% and 97% accuracy for small texts and medium/large texts respectively.

Extracurriculars and Responsibilities

- Placed in top 5 of Data Analysis and Machine Learning competition hosted in annual technical fest of IIT(BHU).
- Contributing to an open source project of Child Rescue Lab, UMass to develop a ML pipeline for detecting and generating timeline of a particular person presence in a video.
- Served as Vice-Captain of Badminton Team, IIT(BHU) and won various tournaments under my leadership.