Piyush Singh

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EDUCATION

IIIT Hyderabad
📅 Dec 2020 - Present
M.S. in Computer Science and Engineering
CGPA: 9.00 / 10.0

IIT Kharagpur
📅 Aug 2012 - May 2017
Dual Degree in Civil Engineering
CGPA: 7.37 / 10.0

ACHIEVEMENTS

- 2nd position in Quantiphi internal hackathon for AI - generated music | 🐙 code
- Top 7% reputation on Stack Overflow for 2022 | 📃 link
- Top 2 percent in JEE and ISAT in the year 2012

SKILLS

- **Programming:** Python, Bash, C++, Java, JavaScript, SQL
- **Tools/Technologies:** Git, Docker, Kubernetes, Airflow
- **OS/Platforms:** Linux, macOS, Raspberry Pi, Android

CONTRIBUTIONS

- Contributed to popular open source work in medical imaging research domain
- Implemented model from research paper and contributed to official repo | 🐙 code
- Contributed to vision pre - processing in Torchvision repo having 12k+ stars | 🐙 code

EXTRA - CURRICULAR

- Part of athletics and basketball teams of Patel hall during college
- Won bronze in intra - collegiate athletics event
- Participated in instrumentals in college open events
- Learnt Spanish and Russian upto medium proficiency as a hobby

EXPERIENCE

IIIT Hyderabad | Research Scholar & T.A.   📅 Dec 2019 - Present
- Developed novel deep learning based sampling technique for active learning using mis-alignment between two models
- Discovered similarities among different cancer types using deep learning and presented global and local evidence for the same
- Prepared quizzes for courses on Optimization and M.L. as T.A.

Quantiphi | M.L. Engineer   📅 Apr 2018 - Oct 2019
- Implemented anomaly detection for a crude oil rig facility using auto-encoder based models trained on historical telemetry data
- Automated with Docker, Kubernetes and Airflow for real-time logging
- Reduced data ingest time by upto 50x by parallelizing ingest pipeline

Oyo Rooms | Business Analyst   📅 May 2017 - Feb 2018
- Implemented business logic for booking without pre-payment on app
- Automated sending dashboards to relevant people for each hotel

PROJECTS

Group Chat Server | 🐙 code
- Built a group chat server in C++ using multi-threading and socket programming on a client-server model. Tested on MacOS and Ubuntu.

Wikipedia Search Engine | 🐙 code
- Built a search engine of Wikipedia 75GB dump by chunking, creating inverted index, merging index files and ranking by relevance

Weakly Supervised Learning in Medical Images | 🐙 code
- Designed and trained single and multi-task multiple instance models for histopathology WSIs for cancer detection and survival ranking

Panorama Generator | 🐙 code
- Implemented a panorama generator by calculating homography, image projection, stitching and post-processing to generate a complete scene

Face Detector | 🐙 code
- Implemented complete pipeline of Viola-Jones object detection framework with integral image, AdaBoost and cascading classifier

Command Line Productivity Tools | 🐙 code
- Built tools to share files with single cURL command, to generate image gallery and to search and play music from Youtube from terminal

PUBLICATIONS

Exploring histological similarities across cancers from a deep learning perspective
Piyush Singh, Ashish Menon, C. V. Jawahar, P. K. Vinod, Frontiers in Oncology, Volume 12, 2022 | 📄 pdf | 📑 ppt | 🐙 code

Interactive learning for assisting whole slide image annotation
Ashish Menon, Piyush Singh, C. V. Jawahar, P. K. Vinod, IEEE Asian Conference on Pattern Recognition, 2021 | 📄 pdf | 📑 ppt | 🐙 code