Shivasankaran V P

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Personal Profile

A senior undergraduate student at Indian Institute Of Technology Gandhinagar specialising in computer science and engineering. I am deeply fascinated by the application of Artifical Intelligence with regards to computer vision tasks.

Education

Indian Institute of Technology Gandhinagar *Gandhinagar, India*
BTech in Computer Science and Engineering *2019 - Current*

- **Current CPI:** 8.6
- **Courses:** Deep learning, Data Science, Compilers, Computer networks, Computer network security, Probablity and random process, Operating systems, Theory of computation, Data structures and algorithms

Chennai Public School *Chennai, India*
High School *Apr 2017 - Apr 2019*

- Specialised in Physics, Chemistry, and Maths with Computer Science
- Top 5 percentile among 2.8 million students

Research Experience

LineEX: Data Extraction from Scientific Line Charts *Gandhinagar, India*
Dec 2021 - Aug 2022

- Collaborated with LINGO lab at IIT Gandhinagar.
- Adapted existing vision transformers and human-pose estimation methods to Data extraction.
- Proposed a novel loss function for data extraction from line charts and proved its effectiveness.
- Created the largest synthetic line chart dataset comprising 430K images.
- Showed significant performance gains over the SOTA methods.
- Accepted in WACV 2023
- **Supervisior:** Professor Mayank Singh

Image retrieval using multi-modal inputs *Gandhinagar, India*
Aug 2022 - Current

- Collaborated with CVIG lab at IIT Gandhinagar.
- Using textual description and hand-drawn sketches to perform image retrieval.
- Leveraging recent advancements in contrastive learning between images and text.
- **Supervisior:** Professor Shanmuganathan Raman

Internships

Strand Life Sciences Pvt. Ltd *Bangalore, India*
Software Intern, Research Informatics *May 2022 - Jul 2022*

- Quantification and Identification of Tumor-infiltrating lymphocytes from WSIs.
- Evaluated various models proposed in the scientific literature for Industrial use.
- Implemented changes in certain models and evaluated their performance.
- Adopted various methods to bridge the lack of big datasets available for the task
- Created a pipeline based on the current State of the art model for the problem.

Projects

COMMENTATOR: A Code-mixed Multilingual Text Annotation Framework *Gandhinagar, India*
IIT Gandhinagar *Aug 2022 - Oct 2022*

- Extended the annotation tool for multilingual sentiment analysis.
- Implemented features for sentence-level and word-level sentiment suggestions.
- Notable features include an uploadable custom model for sentence-level suggestions.

Movie recommendation system using Neural collaborative model   *Gandhinagar, India*
IIT Gandhinagar   *Feb 2021 - Apr 2021*

- Implemented and trained a neural collaborative filtering model.
- Implemented content-based method and matrix factorization method.
- Achieved **SOTA** RMSE of 0.84 for the Neural collaborative model.

Information extraction of devices behind NAT using WebRTC   *Gandhinagar, India*
IIT Gandhinagar   *Aug 2021 - Nov 2021*

- Extracted private IP and other sensitive information about a client behind a NAT.
- Exploited a technical flaw in WebRTC.
- Evaluated the vulnerability on major browsers and discussed the prevention mechanisms.

Publications

- **Shivasankaran V P**, Muhammad Yusuf Hassan, Mayank Singh. LineEX: Data Extraction from Scientific Line Charts. Accepted at WACV 2023 conference.

Skills

Programming   Python, PyTorch, Tensorflow , C/C++, Flask, HTML/CSS, JavaScript, SQL, .
Miscellaneous   Linux, Shell (Bash), Git.

Achievements

2022	**328/340; 170/170 in Quant**, Graduate Record Examinations (GRE)	*India*
2022	**Selection**, Amazon ML summer school	*India*
2022	**Dean's list**, Semester 1 and 6 out of 4 graded semesters	*India*
2019	**All India rank 1319**, JEE Advanced 2019	*India*
2019	**All India rank 1916**, JEE Main 2019	*India*

References available upon request.