Shivam Agarwal

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EDUCATION

Indian Institute of Technology Kharagpur   India
Integrated Master of Science in Mathematics and Computing; GPA: 8.25/10.0   *July. 2014 – July. 2019*

EXPERIENCE

Infiswift Technologies   India
Computer Vision Engineer   *June 2022 - Present*

- Developed AI software for a Robotic Arm that accepts a voice command to perform a pick and place task using a long range and short range depth camera. Used various ML models like - Speech to Text, Entity Extraction from Text, Vision Models to detect and segment Open Set objects.
- Developed application to digitize Work Order and CAD Design drawing PDFs and turn them into Output CSVs with punch locations for each job to be fed to a CNC machine reducing manual work by 90% . Technologies - OCR, OpenCV, Python
- Built and Deployed hybrid recommendation engine for a auction platform for oil fields. Technologies - FastAPI, Cosine Similarity.
- Developed application for conversion of P&ID Image to Smart Drawings (XML) using Computer vision algorithms. Model used - YOLO.

Accenture AI   India
Data Science Consultant   *June 2019 - May 2022*

- **NLP on clinical text** - Applied deep learning models to identify drugs and their adverse events in clinical text. Models Used - RNN, LSTM, Bi-LSTM.
- **Bioinformatics** - Developed algorithms for automatic alignment of protein peptides from Mass Spectrometry, clustering peptides to automate manual scientific work.
- **Developed web application** to capture recommendations and optimize cost of clinical trials. Technologies - Python, React, AWS Lambda, REST API.
- **Developed web application** allowing users to add panel and it's antibodies. Technologies - Python, React, AWS Lambda.
- **Health Insurance claims and calls data** - Descriptive analytics on big data for claims resulting in a call. Technologies - SQL, Pyspark.
- **Sharepoint REST API Automation** - Wrote a library in Python for connecting to sharepoint list and folder for CRUD operations.

Visa Inc   India
Software Intern   *May 2018 - July 2018*

- Developed a proof of concept web application to allow users to make international transactions where transactions data is stored on blockchain which is maintained using Hyperledger Fabric.

University of Alberta Canada   Edmonton, Canada
Research Intern, Machine Learning   *May 2017 - July 2017*

- Identifying regions in spatial-temporal data of Steam assisted gravity drainage reservoir. Algorithms used - K-Means, DBSCAN, Hierarchial Clustering.

National Digital Library   India
Software Intern   *May 2016 - July 2016*

- Integrated IEEE Xplore Digital Library 22GB / 3500000 files to NDL, automating volume-issue-article relations.
- Developed a Genric XML's to CSV parser for the analysis of document metadata using Python.

COMPETITIONS AND SIDE PROJECTS

International Data Analytics Olympiad, Russia - Finalist *Global Rank 11th*
Implemented product recommendation system achieving Global Rank under 30, funded to attend the Final Stage in Moscow, Russia.

DRDO Dare-to-Dream Challenge - Deployed computer vision object detection model on Raspberry Pi4 to detect drones. Model Used - Faster R-CNN, SSD.

PlotExt - Developed application which can extract all the plots in a PDF and convert it to tabular format. [repository]

Ethphoto - Developed decentralized version of Instagram. [repository]

ChatOn - Developed realtime chat web application using React, Socket.IO.

SKILLS

Languages: Python, Javascript, C++, SQL
Technologies: Pytorch, AWS Lambda, React, PySpark, OpenCV, skearn, Flask, Pydantic, RAG, LLMs, OpenAI API
Concepts: Deep Learning, Machine Learning, Computer Vision, NLP, System Design, Algorithms