Jyotirmay Khavasi

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EDUCATION

Vishwakarma Institute of Information Technology   **2020 – Present**
B.Tech in Artificial Intelligence and Data Science, **CGPA: 9.3**   *Pune, India*
- **Relevant Coursework:** Discrete Mathematics, Probability and Statistics, Data Structures, Artificial Intelligence, Operating Systems, Database Management, Software Engineering, Cloud Computing

EXPERIENCE

Wolters Kluwer   **January 2024 – Present**
Data Science Intern   *Pune, India*
- Optimized production-deployed Vision Encoder-Decoder and Layout Transformer models through batch classification and data augmentation techniques resulting in a 4% improvement across all metrics.
- Utilized Hugging Face Optimum to convert models to ONNX format for a 40% reduction in evaluation time for clients.
- Developed an OpenCV based Table Detection pipeline utilizing object detection, image segmentation, morphological operations, contour extraction and coordinate geometry to identify, segment, and reconstruct tables from PDFs, enabling accurate extraction of tabular data.
- Developing an in-house solution for efficient training and evaluation of deployed models, leveraging synchronized multi-GPU processing using Distributed Data Parallel to minimize idle time and accelerate the handling of large datasets.

Google Summer of Code @PyTorch-Ignite   **May 2023 – September 2023**
Open Source Contributor   *Remote*
- Created a template for Reinforcement Learning using DQN and Advantage Actor Critic algorithms, configuring code to efficiently utilize parallel processing for spawning multiple environments and handling various Reinforcement Learning tasks, using interchangeable and flexible components of TorchRL.
- Researched methods to efficiently isolate and segment relevant video sections frame by frame which enabled to extract high-quality input data for the RL model.
- Enhanced CI/CD pipelines with GitHub workflows and enabled Docker containerization. Also, improved the configuration by centralizing YAML attributes, allowing command-line overrides, and helped in integrating with Google Fire and Hydra.
- Implemented code refactoring with Vue.js tags, enabling template inheritance and resulting in more than 1000-line reduction across templates.

HCL Technologies   **September 2022 – March 2023**
Research Intern   *Pune, India*
- Worked on a NLP Model which extracts Rules from given Text. Software converts and Processes Given Text to output the Mathematical Expressions of the Rules.
- Worked on custom BERT architecture which is used for Named Entity Recognition with a Recall of 88%.
- Employed Random Forests for Classification of a given sentence into 'Rule' or 'not Rule' with 92% Accuracy.
- Created Custom Parse Trees which Convert the Rule from the BERT model into a Logical Mathematical Expression.

SKILLS

Languages: C++, Python, SQL.
Developer Tools: Git, Docker, Vim, Shell, LaTeX, VS Code.
Technologies: MySQL, PyTorch, Machine Learning, Image Processing, Deep Learning, Natural Language Processing, Data Science, MongoDB, Neural Networks, Torchvision, Docker, Dockerfile, Flask, REST API.
Soft Skills: Leadership, Mentorship, Communication, Analytical Thinking, Teamwork, Problem Solving.

PROJECTS

SEO using Llama-Index for RAG   *LangChain, Llama-Index, GenAI, OpenAI, Q&A*
- Search Engine Optimization using Llama-Index for Retrieval Augmented Generation based on goals and objectives of companies to generate blogs and content aiming to convert users organically through inbound sales.

Opensource Contributor to PyTorch-Ignite ⭘   *PyTorch, Deep Learning, Neural Networks, Torchvision*
- Active Contributor to the PyTorch Ignite Opensource Library which helps in training and evaluating neural networks.
- Wrote Event Filters for the Engine and Doctests for different Metrics in the Contrib Module

Movie Ticket Booking System ⭘   *DJango, MySQL, WebApp, HTML*
- Developed a WebApp using Django in Python. Implemented Backend Connection using MySQL Database. Integrated the frontend with the Backend seamlessly. Integrated Role based login and booking.

LEADERSHIP AND EXTRACURRICULAR

CyberCell VIIT   **December 2022 – June 2023**
Head of Reverse Engineering   *Pune, India*
- Spearheaded the Reverse Engineering team at CyberCell VIIT, conducting a successful global Capture the Flag (CTF) event with international team participation, awarding swags and cash prizes.
- Solely managed and delegated tasks to team members for creating, validating, and deploying reverse engineering challenges, ensuring seamless handling of traffic from national and international teams.