RUDRAMANI SINGHA

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SKILLS

- Tools: PyTorch, TensorFlow, Scikit-learn, Keras, Spark, JAX, Elasticsearch, Pandas, NumPy, Git, Flask, Django, Docker, AWS, GCP
- Languages: Python, R, C/C++, Java, MATLAB, CUDA, SQL, JavaScript, LaTeX, Markdown, PHP, HTML, CSS, Bootstrap
- Tasks/Pipelines: Retriever-Reader, Abstractive Summarization, Object Detection, Image Segmentation, Question Answering (IRQA)
- Creatives: Blender, Autodesk Maya, AutoCAD, Unreal Engine, Unity, Photoshop, Premiere Pro, After Effects

EXPERIENCE

Columbia University   New York City, NY
Research Assistant   Oct 2022 - Present
- Developing new features for AI Model Share MLOps platform, including model deployment, continuous improvement, and ML analytics, as well as automated machine learning model replication toolkit for enhanced reproducibility research
- Integrating state-of-the-art deep learning models from ML Reproducibility Challenge 2022 using AWS Lambda, resulting in increased efficient deployments and access to ML models

VAO Labs   San Francisco, CA
Machine Learning Consultant   Dec 2021 - Mar 2022
- Led a team of founding engineers to design NLP solutions for supply chain predictability and visibility, yielding high-impact pitches to investors and clients
- Engineered a decision graph framework for hierarchical classification of over 500 classes, with parallel traversal and Q&A justification
- Devised techniques for model inspection, logging, and data caching, resulting in an 80% improvement in R&D performance and enabling rapid development of a working prototype within 1 month

AZYO   San Diego, CA
Machine Learning Engineer - Intern   Mar 2021 - Dec 2021
- Designed an authentication system using facial recognition and anti-spoofing countermeasures against presentation attacks
- Constructed an exam proctoring system detecting head, gestures, and eye movements to generate a confidence metric with RNNs
- Led development of sign language recognition project from data collection, processing, implementation, to deployment; Achieved 95% accuracy on in-house benchmarks with every batch vocabulary R&D cycle

CSKA Automation Services Pvt Ltd   New Delhi, IN
Machine Learning Engineer - Intern   Oct 2020 - Feb 2021
- Refactored entire OCR API pipeline and integrated it with Google Vision API for up to 30% faster performance and better accuracy
- Created post-processing engine to support 11+ different document formats with Named Entity Recognition and REGEX

PROJECTS

- [ChatGPT but it cites its sources](#)
- [GraphWelder](#): High-Performance MLOps Framework For Open-Source Research
- [NeuralJAXwork](#): GPU Accelerated Lightweight ML Framework from Scratch with JAX
- [SegPaintion](#): Realtime Video Instance Segmentation and Inpainting
- [LiveCAPTCHA](#): In-Browser Live Challenge-Response Authentication with Face and Hand Landmarks

EDUCATION

Columbia University   New York, NY
Master of Science in Biomedical Engineering   Expected Dec 2023
- Won Shardashish Interschool Fellowship, worth $50,000, nominated by Dean of Columbia Engineering
- Won Data Science Institute Scholar award for Developing MLOps Tools for Researchers
- Coursework: High Performance Machine Learning, Deep Learning for Computer Vision, Competitive Programming

University of Mumbai   Mumbai, MH
Bachelor of Engineering in Information Technology   Jul 2022
- Undergraduate research assistant; Head Of ABIT-RGIT & IEEE-RGIT; Technical Consultant & Trainer at RGIT-CodeCell

PUBLICATIONS

- R. G. Singha et al., "Dynamic Pose Diagnosis with BlazePose and LSTM for Spinal Dysfunction Risk Estimation," 2022 4th International Conference on Smart Systems and Inventive Technology (ICSSIT), 2022, pp. 1547-1552, doi: 10.1109/ICSSIT53264.2022.9716509
- R. G. Singha et al., "Vehicle Speed Detection Using Multi-Branch Networks From Temporal Image Pairs," 2022 4th International Conference on Smart Systems and Inventive Technology (ICSSIT), 2022, pp. 301-308, doi: 10.1109/ICSSIT53264.2022.9716386