NIKITA SURYA

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PROFFESIONAL EXPERIENCE

Applied Scientist 2, Perfios Software Solutions, Bangalore ***Apr 22-Present***

- Explainability (XAI) of CNN based models.
    - **Publication**: Developed a method called ECLAD to interpret image-based classification models using global explanations and a quantitative score. Co-authored and published this research manuscript ECLAD: Extracting Concepts with Local Aggregated Descriptors in the prestigious Pattern Recognition journal.
    - **Collaboration:** Spearheading the collaboration between RWTH Aachen, Germany and Perfios to research explainability in object detection models. Leading a team of 3 Applied Scientists and 2 Software Developers in this collaboration.
    - **Operationalised** explainability method for classification models capturing both local and global explanations. This method aids developers by giving explanations in the case of data drift in production and detecting bias in data.
- **Leading** a team to build models for generic Key-Value prediction in scanned documents using Layout LM backbone. Streamlining the process to Group, Label, and Link the entities. This will be used by financial institutions as a service for **redacting personally identifiable information (PII)** and **minimize the workload by ~60%** by the data processing team.
- Built a NER model that process data for recommendation models by extracting entities from UPI, NEFT, and RTGS narrations for top 20 banks in India. Achieved 12% better performance than baseline methods and **generated a revenue of $1M.**

Applied Scientist, Perfios Software Solutions, Bangalore ***Mar 21 – Apr 22***

- Headed in designing and streamlining digitization of loan approval documents for a leading bank in India.
    - Digitized **10M documents** which created a potential revenue of **$2M revenue** for the company.
    - Integrated data drift detection and misclassification analysis at large scale.
    - Responsible for building a STP journey for fast processing of few documents.
- Worked on compressing deep learning-based models using different techniques like ONNX, static and dynamic compression.

Master Thesis, Cybernetics Lab, IMA IFU, RWTH Aachen ***Mar 20 - Oct 20***

- Developed an automatic approach for global interpretability of image-based classifications
- Applied feature visualization techniques to extract meaningful concepts responsible for neural network prediction.
- Using TCAV to get importance scores of the concept images for a particular class of images

Student Researcher, Cybernetics Lab, IMA IFU, RWTH Aachen **Sep 19- Dec 20**

- Increasing the quality of rail transport through image data-based damage pattern recognition in rail vehicles- QUISS
- Discontinuity detection, OCR of wagon ID, rescale wagon images, discover common objects in a wagon type, estimate the performance based on this information

EDUCATION

Master's in Robotics Systems Engineering, **,** RWTH Aachen University – **Aachen, Germany** ***Oct 18 – Dec 20***
Bachelor's in Electronics and Communications, Shiv Nadar University – **Noida, India** ***Aug 13 – May 17***

ACHEIVEMENTS

- Blaze a Trail award for **outstanding** contributions at Perfios Software Solutions
- Pat on the back award at Perfios Software Solutions
- Secured 100% **merit scholarship** for the entire undergraduate study

TECHNICAL SKILLS

Programming Languages: Python (Proficient), C (Familiar), Java (Familiar)
Libraries: Numpy, Pytorch, TensorFlow, Pandas, Scikit-Learn, Keras, Open CV, fast.ai, Captum, Albumentations, Paddle Paddle
Interests: Computer Vision, NLP, Explainability (XAI)