MAHESHWAR KUCHANA

MACHINE LEARNING SPECIALIST

Skilled ML Engineer with expertise in designing and developing computer vision systems. Professional in popular ML frameworks. Adept in researching and architecting AI models.

CONTACT

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Place: London, UK

ML TASKS

- Semantic Segmentation
- Classification, Clustering
- Transfer Learning
- Multi-modal Learning
- Auto Encoders
- Ensemble Learning
- Regression
- Super Resolution

TOOLS & SKILLS

- Python
- PyTorch
- TensorFlow
- Keras
- OpenCV, Scikit-image
- Scikit-learn
- NumPy, Pandas, Matplotlib
- AWS EC2, S3, Elastic IP, SNS, SQS
- Flask - API
- MONAI Library (Medical-related)
- Nginx
- MySQL
- Git
- Python testing (PyTest, Unit test)
- Computer Vision
- Machine Learning (ML), Deep Learning (DL)
- Agile Working

PUBLICATIONS

1. Machine Learning predicts live birth occurrence before In-vitro fertilisation treatment
   - *Scientific Reports - Nature*
   - **Cited by 10**
   - **DOI:** 10.1038/s41598-020-76928-z
2. AI aiding in diagnosing, tracking recovery of COVID-19 using deep learning on Chest CT scans
   - *Multimedia Tools and Applications (MTAP) - Springer*
   - **Cited by 10**
   - **DOI:** 10.1007/s11042-020-10010-8
3. Fingerprint Matching - An Experimental Approach
   - *IJRASET*
   - **DOI:** 10.22214/ijraset.2020.6283

ACADEMICS

King's College London (2021 - Present)

Master of Research in Healthcare Technologies (Artificial Intelligence)
Research Projects:
- Quantitative Imaging of the shared placenta in twin pregnancies
- Exploring self-supervised pre-training for data-efficient retinal and sub-retinal fluid segmentation in Optical Coherence Tomography scans

WORK EXPERIENCE

Data Engineer

eMoodie (UK) | June 2022 – Present

- Developing ETL pipelines for the company in two products. Making the data ready for data scientists, business analysts.
- **Skills include:** Python, PySpark, Azure Cloud, Databricks, MLFlow.

AI Software Engineer

Nimblr Data (London) | July 2021 – January 2022

- Created a MVP that served for pre-seed funding series.
- Conceptualised, Architected, Developed the AI-based platform (MVP) that recommends IT solutions to banks.
- Developed REST API (Python), caters user authentication, authorisation, database, notifications; deployed in AWS.
- Headed MVP development phase from UI/UX designing, front-end, backend development to deployment.
- Defined timelines, deliverables, milestones and resource allocation.
- **Skills include:** Python, Flask API, Git, AWS EC2, Elastic IP, MySQL, Ngnix, Agile, MS Office.

Machine Learning Engineer

Scienaptic Systems Pvt Ltd (India) | October 2020 – July 2021

- Devised an AI-based document processing pipeline that automates credit underwriting.
- Utilised Amazon Textract for optical character recognition to digitise transactions in bank statements. Worked for 30 types of bank statements (table detection).
- Employed PDF parse engines like PDFMiner, PyPDF2.

CERTIFICATIONS

- Neural Networks and Convolutional Neural Networks Essential Training - LinkedIn
- Deep Learning - Face Recognition - LinkedIn
- Structuring Machine Learning Projects - Coursera
- Convolutional Neural Networks in TensorFlow - Coursera
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization - Coursera
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning - Coursera
- AI for Medical Diagnosis - Coursera
- Intro to TensorFlow - Coursera
- Neural Networks and Deep Learning - deeplearning.ai
- Machine Learning - Coursera
- Python for Data Science - IBM
- Machine Learning with Python - IBM
- Applied Data Science with Python - IBM
- Data Science Hands-On with Open Source Tools - Cognitive Class
- Data Science Methodology - Cognitive Class
- Data Visualization with Python - Cognitive Class
- Building RESTful APIs with Flask - LinkedIn
- Secure Coding in Python - LinkedIn
- DevOps for Data Scientists - LinkedIn
- Data Engineering Foundations - LinkedIn
- Image Super resolution using Auto Encoders in Keras - Coursera
- Launching into Machine Learning - Coursera

SOCIAL DETAILS:

GitHub:
https://github.com/maheshwarkuchana
LinkedIn:
https://www.linkedin.com/in/maheshwarkuchana/
Portfolio: https://www.maheshwark.com
Google Scholar:
https://scholar.google.com/citations?user=8AevgCUAAAAJ&hl=en

IN NEWS

AI In The Battle Against Cancer

Link: https://replica.substack.com/p/ai-in-the-battle-against-cancer

Study ML/AI Abroad - Leap Scholar

Link: https://youtu.be/HklgSpktV90

- Developed & tested REST API that gives AI predictions, extracted transactional data, and analytics.
- Streamlined a scalable, robust solution in AWS Cloud.
- Released first version in 2 months for 3 large banks.
- Involved in Operations, Software development and ML teams.
- **Skills include:** Python, ML, Flask API, AWS EC2, S3, SQS, SNS, Lambda, Amazon Textract, MySQL, Pandas, Git, Nginx, Agile, PyTest.

Artificial Intelligence Engineer

Adventum Advanced Solutions (India) | May 2019 – Sep 2020

- Developed an end-to-end AI-powered diagnostics platform for eye diseases like diabetic retinopathy and glaucoma.
- Took part in data collection, annotation, pre-processing, ML research, model development and deployment.
- Architected custom convolutional neural networks to solve semantic segmentation and anomaly classification.
- Trained, analysed, and tested the models. Conducted clinical trials for validation.
- Worked on 3D optical coherence tomography (OCT) and fundus scans. Utilised DICOM files from PACS (different vendors).
- Retinal fluid segmentation, Volume quantification, Layer segmentation, and biomarker classification were notable tasks.
- Designed model monitoring dashboards and evaluation metrics in real-time deployment.
- Streamlined REST APIs in AWS Cloud.
- Worked with Ophthalmologists, Biomedical Engineers, and Software Engineers.
- **ML tasks include:** Multi-modal learning, Transfer Learning, and Ensemble Learning.
- **Medical softwares:** ITK-Snap, 3D Slicer, MONAI, Orthanc.
- **ML, DL algorithms:** SVM, Random Forests, ResNet, Attention units, AdaBoost, Auto Encoders, U-Net.
- **Tools include:** PyTorch, TensorFlow, Keras, OpenCV, Scikit-learn, Scikit-image, NumPy, Pandas, Matplotlib, Seaborn, Python, AWS Cloud, MySQL, Flask API, Ngnix, Git.

Research Intern - Machine Learning

BML Munjal University (India) | May 2018 – July 2018

- Published a research paper that demonstrates a technique to find a region of interest (ROI) in fingerprints.
- Reduces the computation time for fingerprint recognition.
- Employed machine learning techniques to identify patterns.
- **Skills include:** OpenCV, Scikit-learn, Scikit-image, NumPy, Matplotlib, Python, SVM, Random Forests, Dimensionality reduction, Pattern recognition, Git, Research writing.

PROJECTS

Quantitative Imaging of the shared placenta in twin pregnancies

- Developed a prototype pipeline that aids in surgery planning for Twin to Twin transfusion syndrome surgery.
- Utilised 3D t2-MRI and Perfusion scans to detect blood vasculature in shared placenta. Segmented 3D vessel network is used for surgical planning.
- Employed Super resolution, reconstruction, semantic segmentation.
- **Tools used:** MONAI Library, PyTorch, U-Net, ResNet, Python, Nifty-MIC, Git, Google Colab, Transfer learning.