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

Email: kmaheshwar1998@gmail.com
Mob. No: +44 (0) 782 595 8328
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 9**
   - **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 8**
   - **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

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.
- 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.

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

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.

Pancreas Segmentation - Medical Segmentation Decathlon

- Segmented pancreas in abdominal CT scan using convolutional neural networks.
- **Techniques used:** V-Net, 3D Patch-based learning, Sliding window inference strategy, Multi-modal learning, Ensemble learning.