

Maulik Pandya

Data Scientist



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PROFILE SUMMARY

- Result oriented professional with 9+ years of industrial experience in the field of Deep Learning, Machine Learning, and Image Processing.
- Received "**Team Up to Win**" award during Philips annual award ceremony 2020 by head of Philips Innovation Campus, India.
- Secured first rank at winter school on Deep Learning for Visual Computing 2017, organized by IIT Kharagpur.
- Experience in agile based project management, developing and deployment of projects related to AI/ML to product platforms.
- Actively involved in discussion with stack-holders and BU leaders for prototyping various research projects.
- Experience in Ideation (Patent Filing), Need Seeking, Solution Roadmap Creation, Coaching & Mentoring. Ability to learn new technologies quickly and good team player.



Technical Skills

- Python (numpy, pandas, scikit-learn), MATLAB, basics of C/C++
- OpenCV, TensorFlow, Keras, OpenVino
- MLOPS, GAN, LLM, Diffusion Models, MONAI Framework
- Pycharm, Jupyter notebook, Visual studio
- Exploring AWS and Sagemaker



WORK EXPERIENCE

Philips, Research Department, Bangalore, India

Lead Data Scientist *June 2018 – Present*

AI based LI-RADS

- For HCC (hepatocellular carcinoma) detection, developed deep learning based medical image analysis tool for liver and lesion segmentation on CT and MRI.
- Developed LI-RADS characterization and scoring using ML based model training by extracting hand crafted features (patent filled).
- Developed solution is integrated to Philips product & internal platform 1) VITAMIN and 2) intellispace discovery ([product link](#)) 3) Intellispace portal ([product link](#)) and deployed at multiple sites.

Lung Nodule Characterization

- As a part of public private partnership with SDAIA ([press link](#)), developed AI based pipeline to detect lung nodule in CT scan and characterize them based on severity.
- Also trained SDAIA data scientists, as a part of scientific exchange program on AI in healthcare.

Fast brain stroke detection

- To perform fast brain Hemorrhagic stroke detection, developed DL based classification on MIP image generated from multi point view.
- Gradcam++ response is used to locate Hemorrhage in 3D volume along with extension of pipeline for CBCT data for clinical workflow.

Wearable Ultrasound for HDM

- Involved in development of Ultrasound based non-invasive patient vital monitoring.
- Developed module for real time artery identification, pulsatile artery diameter extraction, velocity profiling and blood flow calculation from ultrasound images.

Continental AG, Advance Engineering Group, Bangalore, India

Senior ML Engineer (Nov 2016 – June 2018)

- Active involvement in development of Machine Learning based object detection framework. Developed deep learning based real time automotive applications using various region proposal architectures.

HCL Tech, Imaging Tech Lab, Bangalore, India

Member Technical Staff (May 2015 – Nov 2016)

- Developed driver authentication system, to confirm and give access to registered car users using facial biometric as an identity.
- As a part of departure warning system, I developed lane marker curve fitting tracking them using Kalman filter and adaptive ROI selection based on confidence analysis.

TCS, Pune, India

Assistant System Engineer (Sept 2013 – May 2015)

- As a part of multi-camera based panoramic surveillance system, developed system to detect and track objects from 360-degree panoramic surveillance image. I mainly focused on, developing image demosaicing and pre-processing pipeline and model for viewpoint stabilization using vehicle INS data.



PATENTS & PUBLICATIONS

- Analyzing liver lesions in medical images, WO2023139086A1.
- Training a model to perform a task on medical data, EP3937084A1, WO2022008630A1.
- Selecting a training dataset with which to train a model, EP3940597A1, WO2022013264A1.
- System and Method for Continuous Learning for Medical Image Segmentation Algorithms, WO2023104464
- Managing a model trained using a machine learning process, WO2023073092A1.
- Systems and methods for identifying a vessel from ultrasound data, EP3928709A4, WO2021259713A1.
- Ultrasound data processor, EP3967237A1, WO2022013279A1.
- Method to find Optimal Color and Power Doppler Settings for Ultrasound based Flow Measurements, patent filed on Jan 2023.
- Hybrid AI based stroke characterization with explainable model, Journal of the Neurological Sciences, 2019, vol. 405, pages 162-163



EDUCATION

Master of Technology

2011 - 2013

- **Specialization:** Machine Intelligence
- **University:** DA-IICT, India
- **Grade:** 8.02/10 (CPI)

Bachelor of Engineering

2007 - 2011

- **Specialization:** Electronics & Communication
- **University:** Sardar Patel University, India
- **Grade:** 8.4/10 (CPI)