

Pratik Katte

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WORK EXPERIENCE

Senior Research Engineer, Niramai Health Analytix, Bangalore, India

Jan 2020 – Present

- Was responsible for developing a machine learning based algorithms for a desktop application to help technicians efficiently capture breast thermal images for cancer screening.
- Played a lead role in developing an AI based desktop application that screens people to detect COVID-19 symptoms such as elevated temperature and shortness of breath and compel people to follow COVID-19 protocol. The application screened 1M+ people across India.
- Worked on training a U-Net based deep learning model for the task of lung segmentation in a compressed image of a chest X-ray, as part of the Xray Setu Project. This contribution significantly improved the AUC score of the lung abnormality classifier.
- Awards: “On Spot Award” and “Working beyond boundaries Award” for the performance on Niramai Fever Test product.

Co-founder, Rewind, Mumbai, India

Sept 2018 – Nov 2019

- Rewind focused on leveraging the traditionally established network of waster pickers, paper and metal shops and recyclers to build a platform that enables people to sell scraps like electronics, furniture, etc.
- Running in stealth mode for one year, we collaborated with 10 waste pickers and a 2 recycler and collected electronics and metal scraps.

Research Intern, L.V. Prasad Eye Institute, Hyderabad, India

Jun 2018 – Aug 2018

- Designed and developed a conversational chatbot using decision tree algorithm to streamline booking an appointment with a doctor and educate patients about eye diseases.
- Developed an algorithm using to quantify the health of an eye using.

Data Science Intern, Prakshep, Bangalore, India

Jun 2017 – Jan 2018

- Experimented with unsupervised machine learning like Gaussian Mixture Model and deep learning models like U-Net to segment forest and deforest lands on satellite images.
- Developed a Geographic Information System using GeoServer and GDAL Python library for working with geospatial data related to crop harvests for farmers to make informed decision in selecting the seed for subsequent yield.

Software Development Intern, Physok Learning Solutions, Mumbai, India

Mar 2018 – Jan 2018

- Trained a document classifier across 8 documents using XGBoost with 95% accuracy.
- Worked on creating a corpus of tagged parts of speech and training a model using Stanford-ner-tagger to parse unstructured Indian Addresses.

Data Science Intern, Flexiloans, Mumbai, India

Mar 2018 – Jan 2018

- Trained a document classifier across 8 documents using XGBoost with 95% accuracy.
- Worked on creating a corpus of tagged parts of speech and training a model using Stanford-ner-tagger to parse unstructured Indian Addresses.

Project Intern, Xerox Research Center India, Delhi, India

Jun 2016 – Jul 2016

- Contributed in deploying canvas learning management platform on Heroku server for the government students of India.
- Recorded video lectures, designed the whole curriculum and course schedule for the subject "Programming with C++".

EDUCATION

University of Mumbai, Mumbai, India

Jun 2015

Bachelor in Engineering, Information Technology

Relevant Coursework: Intelligent System, Image Processing, Computer Graphics and Virtual Reality, Big Data Analytics

PUBLICATIONS

Pratik K., et al. ‘Automated Thermal Screening for COVID-19 using Machine Learning.’ *arXiv preprint arXiv:2203.14128* (2022).

Sabyasachi S., **Pratik K.**, et al. ‘Abstract PS2-44: Diagnosing COVID-19 From Images of Chest X-rays Communicated Via WhatsApp.’ UKIO Congress (2022).

Patil, Vivek, **Pratik Katte**, and Abhay Patil. ‘Restoration of Images Using Only Noisy Data.’ *International Journal of Research and Analytical Reviews (IJRAR)* 6.1 (2019).

CONFERENCE TALKS

- 'Niramai Fever Test: Automated Screening for COVID Symptoms', Wolfram Technology Conference – 2021
- 'Machine learning for COVID-19 detection', Data Science Conference, Europe – 2021

PROJECTS

Image Restoration

Dec 2016 – Feb 2017

- Using U-Net based architecture, trained a deep learning model to remove photographic noise, de-noising synthetic Monte Carlo images, and reconstruction of under sampled MRI scans.

Digital Exophthalmometer

Jun 2018 – Jul 2019

- The project intended to digitize the traditional instrument used by an optometrist to measure the eye's forward displacement for Exophthalmos.
- We designed a 3D printed working prototype that uses a Near-Infrared camera placed on the socket bone to capture an image and developed an algorithm using k-means clustering to detect the iris and pixel per millimeter ratio to measure the protrusion of the eye.

Iris Based Attendance Management System

Dec 2016 – Feb 2017

- Led a team of 5, designed and developed an iris based attendance management system for Ministry of Rural Development, Government of India.
- I was responsible for implementing an algorithm proposed by J. Daugman for iris recognition in Python.

CERTIFICATIONS

<i>Aug 2022 – Dec 2022</i>	Artificial Intelligence in Medical Image Analysis	Indian Institute of Science, Bangalore, India
<i>Sep 2022</i>	Workshop on Bioinformatics	Indian Institute of Science, Bangalore, India
<i>Oct 2018</i>	National Workshop on Quantum Information and Information Security	International Institute of Information Technology, Hyderabad, India.

TECHNICAL SKILLS

- Programming Languages: Python, NodeJS, ReactJS, C++, C#.
- Frameworks/Libraries: TensorFlow, PyTorch, Keras, Django, WPF