Pratik Katte

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WORK EXPERIENCE

Senior Research Engineer, Niramai Health Analytix, Bangalore, India   *Jan 2020 – July 2023*

- Lead developer of an AI-based software that aids technicians to efficiently capture breast thermal images.
- Responsible for developing deep learning based algorithms that examines thermal images for its focus, view angle, position correctness as well as its temperature value correctness.
- Was singularly responsible for the research and development of an AI-based 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.
- As part of XraySetu project, trained and deployed a U-Net based deep learning model for lung segmentation on compressed chest X-ray images. This contribution significantly improved the AUC score of the lung abnormality classifier.
- Contributed in deploying the XraySetu service in production serving more than 1k doctors.
- Awards: "On Spot Award" and "Working beyond boundaries Award" for the work on the Niramai Fever Test product.

Co-founder, Rewind, Mumbai, India   *Sep 2018 – Nov 2019*

- We at Rewind focused on leveraging the traditionally established network of waste pickers, paper, and recyclers to build a platform that enables people to sell scraps like electronics, furniture, etc.
- Operating the startup in stealth mode for one year, we collected electronics and metal scraps by collaborating with ten waste pickers and two recyclers.

Data Science Intern, L.V. Prasad Eye Institute, Hyderabad, India   *Jun 2018 – Aug 2018*

- Designed and developed a conversational chatbot using the Random Forest algorithm to educate patients about eye diseases and streamline booking appointments with a doctor. Deployed at several hospital and clinical premises.
- Implemented data-syncing service between a pupil-plus device and Azure storage to facilitate access to information for doctors.

Data Science Intern, Flexiloans, Mumbai, India   *Feb 2018 – Mar 2018*

- Trained an SVM-based machine learning model with 95% accuracy to classify eight types of official documents for efficient screening of loan applications.
- Worked on creating and training a corpus of tagged parts of speech using Stanford-NER-Tagger to parse unstructured Indian Addresses.

Data Science Intern, Prakshep, Bangalore, India   *Jun 2017 – Jan 2018*

- Experimented with several unsupervised machine learning algorithms 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 (GIS) using GeoServer and GDAL Python library to display geospatial data related to crop harvests for farmers to make informed decisions in selecting the seed for subsequent yield.

Software Development Intern, Phyzok Learning Solutions, Mumbai, India   *Dec 2016 – Jan 2017*

- Contributed in developing a Selenium based image scraper web service that aids in for video editors.
- Worked on using a Python library NLTK to tag parts of speech and automatically extract sentences from the research content.

Project Intern, Xerox Research Center India, Delhi, India   *Jun 2016 – Jul 2016*

- Contributed in deploying the 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.' AIIMA (2022). Lecture Notes in Computer Science, vol 13602. Springer, Cham. https://doi.org/10.1007/978-3-031-19660-7_7

Sabyasachi S., **Pratik K.**, et. al. 'P092: 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 objective of the project was 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.

Attendance Registration using Iris Biometric   *Dec 2016 – Feb 2017*
- Led a team of 5, designed and developed an iris based attendance registration system for Ministry of Rural Development to facilitate fair payment of wages to the labourers.
- Used image processing algorithms like Canny edge detection and 2-D Gabor filter to implement an iris recognition algorithm.

CERTIFICATIONS

March 2023	Bioinformatics Specialization	University of California, San Diego (Coursera)
Aug 2022-Dec 2022	Artificial Intelligence in Medical Image Analysis	Indian Institute of Science, Bangalore, India
Sep 2022	*Workshop on Bioinformatics*	Indian Institute of Science, Bangalore, India

TECHNICAL SKILLS

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