

Ramya Bygari

ramyabygari239@gmail.com | ramyabygari.github.io

Education

National Institute of Technology Karnataka, Surathkal

Bachelor of Technology in Computer Science

Surathkal, India

2016 - 2020

Experience

Razorpay

Data Scientist | Badri Vasudevan, Birendra Sahu

Aug 2020 - Present

Bangalore, India

- Smart Routing : Transformed the existing rule-based system to a scalable ML system that intelligently handles payment transactions. Saved in the order of millions of dollars. Increased success-rate by 4-6%.
- Building self-serve pipelines to provide the data analytics team with a seamless recommendation infrastructure. Developed data pipelines for efficient extraction and processing of terabytes of data collected daily.

University Of Cambridge, United Kingdom

Research Collaborator | Prof. Andreas Bender

Oct 2021 - Present

Remote

- Quantifying the rich information present in cellular features using GCNNs to accelerate drug discovery.
- Working on various representational learning algorithms to identify morphological patterns in cell population resulting from chemical and genetic perturbations.

PathCheck, MIT Media Lab SpinOff

Research Collaborator | Prof. Ramesh Raskar

Aug 2021 - Present

Remote

- Deployed a rapid fact-checking search engine, to curb the spread of misinformation that collates information from various sources, checks for authenticity, and concisely summarizes the reliable articles. (covid-news.org)
- Conducting behavioral studies to scale the privacy preserved solution developed to diverse countries such as India.

Adobe Systems India

Product Intern | Adobe Animate Team

May 2019 - July 2019

Bangalore, India

- Developed a plugin to support platform-independent and variable frame-rate animation export through Lottie, an open-source JSON-based animation file. Reduced the animation export time from 5 mins to 2 mins.

Chennai Mathematical Institute

Research Intern | Prof. Prajakta Nimborkar, Skylark Drones

May 2018 - July 2018

Chennai, India

- Implemented a deep learning system that effectively estimates the damage of a field by segmentation of the weed from the main crop. Helps farmers govern their crops efficiently.
- The system is currently deployed in over 2 million+ farms in India.

Selected Projects

Merchants - Payments Prediction

Birendra Sahu, Nikhil Singh

Dec 2020 - Feb 2021

Razorpay

- *Motivation:* Efficiently allocate resources required for processing payments (results in cost-savings, 6 million+ transactions processed) and derive valuable customer insights.
- Developed feature engineering and training data pipelines to predict the number of payments corresponding to a merchant at any time of the day.

Breast Cancer Treatment Planning

Prof. Jency Rajan, KMC Hospital Mangalore | [Project Link](#)

Jan 2019 - Oct 2020

National Institute of Technology Karnataka

- *Motivation:* Reduce the pathologist's manual effort of individual biomarkers' assessment to determine the molecular subtype of cancer.
- Developed an ML system with a customized loss function to handle dataset imbalance and proposed a modified LadderNet architecture for intermediate segmentation. Achieved an overall accuracy of 91.2%.

Diabetic Retinopathy Detection

Prof. K Chandrasekaran | [Project Link](#)

Jan 2020 - Aug 2020

National Institute of Technology Karnataka

- *Motivation:* Early detection of blindness caused by Diabetic Retinopathy.
- Developed a system consisting CNNs and EfficientNet to weigh the granular details of an image. Achieved an accuracy of 94.80%.

Prostate Cancer Grade Classification

Prof. Shashidhar G Koolagudi | [Project Link](#)

June 2021 - Present

National Institute of Technology Karnataka

- *Motivation:* Detect the ISUP Grade Of Prostate Cancer.

- Developed an end-end deep learning system consisting of UNet for segmentation and ensemble models for classification. Achieved an accuracy of 92.38%

Automatic Music Generation

Jan 2019 - July 2019

Prof. Shashidhar G Koolagudi | [Project Link](#)

National Institute of Technology Karnataka

- Developed a Sequence-to-Sequence RNN with LSTM that can learn chord progressions from music in the training data and generate brand new music sequences using a short music sample.

Implementation of ECN+ for ns-3

Oct 2018 - July 2019

Prof. Mohit P Tahiliani | [Project Link](#)

National Institute of Technology Karnataka

- Implemented ECN+ in ns-3, an extension of the ECN signaling mechanism used to signal the sender about congestion in a network. PR under review in ns-3.

Social Sale : Ecommerce among college students

Jan 2018 - July 2018

Prof. M. Venkatesan | [Project Link](#)

National Institute of Technology Karnataka

- Developed e-commerce and mentoring web-application platform, with chatbot support, to all students within a college to exchange products and information.

Patent and Publications

- **An AI-powered Smart Routing Solution for Payment Systems | Conference Paper**
Ramya Bygari, Aayush Gupta, Shashwat Raghuvanshi, Aakanksha Bapna, Birendra Sahu
Accepted at IEEE Big Data Conference 2021 | [Paper](#)
- **Blindness (Diabetic Retinopathy) Severity Scale Detection | Conference Paper**
Ramya Bygari, Rachita Naik, Uday Kumar P
Accepted at 8th International Conference on Software Defined Systems (SDS-2021) | [Paper](#)
- **Prostate Cancer Grading using Multistage Deep Neural Networks | Conference Paper**
Ramya Bygari, Rithesh K, Sateesh Ambesange, Shashidhar G Koolagudi
Accepted at 3rd International Conference on Machine Learning, Image Processing, Network Security and Data Sciences (MIND-2021) | [Paper](#)
- **Automated Molecular Subtyping of Breast Carcinoma using LadderNet Architecture | Journal**
S Niyas, Ramya Bygari, Rachita Naik, Bhavishya Viswanath, Tojo Mathew, Jyoti R Kini and Jeny Rajan
Under revision at IEEE Journal Of Translational Engineering in Health and Medicine (IEEE-JTEHM) | [Paper](#)
- **System and method for graduate application assistance**
Inventors : Sethuraman T V, Ramya Bygari, Srinidhi Murali, Sujay Bokil, Vidya G
Under Review at Indian Patent Office | [Patent document](#)

Leadership / Extracurricular

- **Speaker at ODSC APAC 2021**
Delivered a webinar on Razorpay's ML Smart Routing architecture and its capabilities. (Youngest Speaker)
- **Volunteer at Winvinaya Foundation (Indian NGO)**
Teaching coding (JAVA and SQL) to Person With Disabilities (PWD's), economically disadvantaged, nurturing their communication skills, and assisting them in tackling interviews effectively.
- **Remote Volunteer at AI For Social Good, UK**
Working with the climate misinformation team, combating the spread of misinformation by classifying trusted sources.
- **Workshop coordinator at Grace Hopper Conference (GHC)**
Conducted a workshop on MLOps to illustrate the importance of orchestrating ML pipelines.
- **Mentor at GHC 2021**
Mentored 100+ students and helped them make their first open-source contributions. (Project : [Hyperledger](#)).
- **Core Placement Coordinator, NITK**
As a part of the core placement team, conducted recruitment drives for over 250 companies at NITK.
- **Event Organizer at Smart India Hackathon (SIH) 2019, NITK**
Coordinated with over 300 people from all over the country and helped conduct SIH, India's biggest hackathon.
- **General Maintenance Councillor, NITK**
Headed various social initiatives such as tree planting and beach cleaning activities.