

# Vartika Pathak

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## WORK EXPERIENCE

### FRACTAL.AI | DATA SCIENTIST

Aug 2021 – Current | Bangalore, India

- Perform advanced analytics to optimise Pricing and Promotions for a leading CPG Company for over 3 markets in Europe.
- Generate on average a profit opportunity of over € 1 M per market with predictive regression models (mean RSQ 85% & MAPE 8%).
- Improving current practices under Revenue Growth AI Pod.

## INTERSHIPS

### MUMA COLLEGE OF BUSINESS, UNIVERSITY OF SOUTH FLORIDA

GLOBAL SUMMER RESEARCH INTERN

June 2020 - November 2021 | Florida, USA | Supervision of Prof. Padmanabhan and Prof. Korimilli

- Designed a U-Net based Convolutional Neural Net for fractographic segmentation of Ti-6Al-4V alloy samples achieving 0.82 IoU.
- Built a dataset to demarcate complex features into 3 fracture modes.

### CIPHENSE.AI | COMPUTER VISION INTERN

May 2020 - August 2020 | California, USA

- Developed a pipeline to generate partial faces from masked images to finetune FaceNet achieving test accuracy of 87%.
- Built a REST API for partial face alignment & landmark detection.

### MARUTI SUZUKI INDIA PVT. LTD. | SUMMER INTERN AT R&D DEPARTMENT

May 2019 - June 2020 | Gurgaon, India

- Performed Scanning Electron Microscopy analysis to contributed a 12% increase in analysed cases of failure as part of Quality Assurance.

## PROJECTS

### BOSCH'S TRAFFIC SIGN RECOGNITION | INTER IIT TECH MEET 9.0

February 2021 - March 2021

- Led a team of 10 to build a user friendly tool to ease experimentation on traffic sign recognition with with train accuracy 99.73% & test accuracy 98.8% on German Sign Recognition Benchmark dataset.

### AGRICULTURE SUBSIDIES- WTO, INDIAN ECONOMIC POLICIES & ITS ECONOMIC IMPACT | INTERNATIONAL ECONOMICS (DR. RUCHI SHARMA, IIT

INDORE)

July 2019 - Nov 2019

- Wrote a survey paper to analyse the regulations governing the support measures adopted by countries, the state of Indian Agriculture, impact of subsidies, & suggestions to resolve international disputes.

## COURSES

**Certifications:** Fractal Certified Data Scientist, Great Learning Program in Data Science, Analytics & Data Engg., Machine Learning by Andrew Ng

**Math/Programming:** C/C++ Programming, Calculus, Numerical Methods, Linear Differential Equations, Complex Analysis, Differential Equations

**Economics:** Macroeconomics, Microeconomics, Indian Economy, International Economics

## EDUCATION

### INDIAN INSTITUTE OF TECHNOLOGY (IIT)

INDORE BACHELOR OF TECHNOLOGY (BTECH)

METALLURGY ENGINEERING AND MATERIALS SCIENCE

MINOR IN HUMANITIES AND SOCIAL SCIENCES

Jul 2017 - Jun 2021 | Indore, India

Cum. GPA: 8.8 / 10.0

## PUBLICATIONS

USING PREDICTIVE LEARNING BASED TECHNIQUES FOR EFFECTIVE FRACTOGRAPHIC ANALYSIS

Elsevier Engineering Fracture Mechanics | First Authored (in submission)

MACHINE LEARNING TECHNIQUES FOR FRACTOGRAPHIC ANALYSIS

75th Annual Technical Meeting & International Conference of the Indian Institute of Metals 2021 (Best Oral Presentation)

## AWARDS/HONORS

- STAR AWARD - GOOD SAMARITAN FRACTAL.AI | 2022
- NOMINATION FOR INVENTIV PAN IIT R&D FAIR | 2022
- BEST BACHELOR'S THESIS AWARD IIT INDORE | 2021
- BEST ORAL PRESENTATION 75TH ANNUAL TECHNICAL MEETING OF THE INDIAN INSTITUTE OF METALS | 2021
- SILVER MEDAL BOSCH'S TRAFFIC SIGN RECOGNITION PROBLEM STATEMENT 9th Inter-IIT Technical Meet | 2021
- FIRST POSITION IMPROMPTU SPEAKING CONTEST AND SPEECH EVALUATION AT FRACTAL BENGALURU TOASTMASTERS CLUB | 2021
- QUARTER-FINALIST ASIAN PARLIAMENTARY DEBATE AT 4th Inter-IIT Cultural Meet, IIT BOMBAY | 2019

## POSITIONS OF RESPONSIBILITY

- Sergeant At Arms, Ex - VP | Fractal Bengaluru Toastmasters Club
- Placement Manager | Training and Placement Cell, IIT Indore
- Founder and President | The Debating Society, IIT Indore
- Director General | Model United Nations'18, IIT Indore
- Captain | Institute's Women Badminton Team, IIT Indore
- Volunteer | The Art of Living International Organisation
- Member | Entrepreneurship Cell, IIT Indore

## SKILLS

### PROGRAMMING

Python • C/C++ • SQL • MATLAB • PySpark

### LIBRARIES/Frameworks

Keras • Numpy • Pandas • Scikit Learn • Matplotlib • PyTorch • TorchVision • Azure

### TOOLS/PLATFORMS

PowerBI • Azure • Excel • Git • Docker