

# VINITHA M RAJAN

☎ +91-9446382600 ◊ ✉ vinithamr.nitc@gmail.com ◊ 🌐 Vinitha-M-R ◊ 📄 : Vinitha M Rajan

## EXECUTIVE SUMMARY

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I am a post graduate in Computer Science & Engineering, with an experience of 3.5 years in machine learning research, 7 years in software industry and 1 semester in teaching. I eagerly look forward to work in a challenging and rewarding environment, to explore my capabilities as a research scholar and contribute to the field.

## AREAS OF INTEREST

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Natural Language Processing; Document Summarization; Fair & Interpretable Learning

## ACADEMIC PROFILE

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<b>Research Scholar</b> Indian Institute Of Technology Palakkad. CGPA : 9.75/10	2021 - Now
<b>Master of Technology in Computer Science &amp; Engineering</b> College Of Engineering Trivandrum. CGPA : 9.47/10	2017 - 2019
<b>Bachelor of Technology in Computer Science &amp; Engineering</b> National Institute Of Technology Calicut. CGPA : 8.48/10	2004 - 2008

## RESEARCH PROJECTS

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- Multi-Variate Time Series Anomaly Detection** July'22 - Now
  - Research to improve the performance of anomaly detection in high dimensional time series data
  - Handling the challenges of label unavailability and complex temporal, feature correlations within data.
- Fast Radio Burst (FRB) Identification In Astronomical Time Series Data** Nov'22 - Now
  - Analysis of telescopic time series observations to detect high energy signals of very short duration
  - Need to verify the established physical laws among the potential candidates from enormous data
- Automatic Summarization Using Semantic WordClouds** 2018 - 2019
  - Visualization of text summaries using the technique of word clouds
  - Developed a novel technique of "local context similarity" for the word placement strategy
- TCAV (Testing With Concept Activation Vector)** April'22
  - GoogleNet model was retrained with FRUITS dataset using transfer learning
  - TCAV was used to verify that human-friendly concepts provided were correctly interpreted by the model's internal neural network state
- Image Captioning** April'22
  - Developed a pipeline using various CNN and LSTM models for learning image features and its corresponding textual embeddings
  - Used BLUE score to verify which combination gave the best results

## COURSES

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- Machine Learning; Optimization; Deep Learning; Probability & Statistics;
- Responsible AI; Research Methodology
- Machine Learning
- Python Basics; Python Functions, Files And Dictionaries; Data Collection And Processing with Python;

IIT Palakkad  
Stanford University

## CERTIFICATES & WORKSHOPS

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1. Data Science: Probabilistic and Optimization Methods
2. Applications of AI for Predictive Maintenance
3. Accelerating Data Engineering Pipelines
4. Fundamentals of Deep Learning
5. Sun Certified Programmer for Java 6

ICTS (TIFR) Bangalore  
NVIDIA Deep Learning Institute  
NVIDIA Deep Learning Institute  
NVIDIA Deep Learning Institute  
Oracle India Private Limited

## ACADEMIC ACHIEVEMENTS

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1. UGC-NET JRF Award with 100 percentile score, December 2019.
2. UGC-NET Assistant Professor Qualification, December 2019
3. Academic Excellence Award, College Of Engineering Trivandrum, 2019.
4. GATE 2017: All India Rank - 826; Score : 684.

## SKILLS

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**Languages :** Python, MATLAB, Java, HTML, C, C++  
**Frameworks :** PyTorch, TensorFlow

## TEACHING ASSISTANCE

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- Course :** Optimization Aug - Dec '22, Aug - Dec '23
1. Designed tutorials, homework sets, programming assignments with novel problems to enhance student's command over the learned concepts
  2. Quizzes were set with illustrations and graphs to promote creative thinking rather than rote learning

## TEACHING EXPERIENCE

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**Mar Baselios College Of Engineering And Technology, Trivandrum, Kerala**

**Designation :** Assistant Professor

Jan'20 - July'20

**Courses Taught :** Software Engineering, Advanced Computer Architecture

1. Theoretical concepts were taught with visual aids and problems to ensure student participation and discussion
2. Provided group assignments on various software engineering tools such as BitMatrix24, OrangeScrum, and GitHub to enhance teamwork and innovation

## SOFTWARE INDUSTRY EXPERIENCE

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**Oracle India Private Limited**

**Senior Applications Engineer**

- **Application Management Pack** May'08 - May'12
  - Plugin between two cloud services "Oracle Enterprise Manager" and "Oracle E-Business Suite"
  - Developed efficient methods for seamless integration, irrespective of the service's version upgrades
- **CRM On Demand** June'12 - Sept'15
  - Cloud application which had to be maintained for providing the services of "Oracle Siebel CRM"

## EXTRA CURRICULAR ACTIVITIES

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1. **Petrichor TechFest 2022, IIT Palakkad**
  - Conducted one session of hands-on workshop to provide the basic concepts of machine learning
2. **ScienceQuest (AI Workshop for school students), IIT Palakkad**
  - Engaged students to develop, train and test a basic image classification model using *Google Teachable Machine*
3. **Datascience Talk Series, IIT Palakkad**
  - Conducted monthly talks on various emerging AI topics by experts in academia and industry