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Naresh Kumar D

Curriculum Vitae

Education

2016-2020 **B.Tech., National Institute of Technology, Tiruchirappalli**
Concentrations and Interests: Deep Learning, NLP, Computer Vision.

Honors and Awards

2019 **Best Paper Award**, Fifteenth International Conference on Information Processing (ICInPro), ID-41.

2019 Honorary **Rosalind membership at London Journal Press**.
Awarded to manuscript published in the Procedia Computer Science journal. Membership ID #CS2299

2019 **Best Research Award**, ScienceFather. Submission ID-1972.

Publications

CONECCT-2020 Authors - Pushpa C. N., **Naresh Kumar D***, SanthanaVijayan A.
Improving Web Service Discovery by Hybridization of Ontology Focused Concept Clustering and Interface Semantics. *International Conference on Electronics, Computing and Communication Technologies.*

ICInPro-2019 Authors - **Naresh Kumar D***, Gerard Deepak, G VSN Sai Yashaswea Bharadwaj.
OntoQuest: An Ontological Strategy for Automatic Question Generation for e-assessment using Static and Dynamic Knowledge, *Fifteenth International Conference on Information Processing.* ***(Best paper Award)***

Authors - **Naresh Kumar D**, Sairam H*, P Siva Sai Kumar, A SanthanaVijayan.
A Novel Approach for Inter-Domain Personalized Search based on Semantic Set Expansion. *Fifteenth International Conference on Information Processing.*

ICCIDS-2019 Authors – **Naresh Kumar D***, Gerard Deepak.
A Novel Semantic Approach for Intelligent Response Generation using Emotion Detection Incorporating NPMI Measure. *(Procedia Computer Science).* ***(Best Research Award)***

A Semantic Approach for Entity Linking by Diverse Knowledge Integration incorporating Role-Based Chunking. *International Conference on Computational Intelligence and Data Science.*

ICSCSP–2019 Authors – **Naresh Kumar D***, SanthanaVijayan A.
A Semantic-Aware Strategy for Automatic Speech Recognition incorporating Deep Learning Models**.** *International Conference on Soft Computing and Signal Processing*, AISC (SCOPUS)

A Novel Hybridized Strategy for Machine Translation of Indian Languages**.** *Advanced Intelligent Systems and Computing (AISC), SCOPUS.*

Work Experience

Research

Aug'19 – May'20 Research Assistant, Dr. A SanthanaVijayan, Department of Computer Science and Engineering, NIT-Trichy
Project: **Course recommendation for e-learning platforms incorporating semantic modelling.**

- Proposed a flexible, dynamic and light-weight recommendation engine incorporating underlying semantics for several e-learning applications.
- Work submitted to IGI global publications.

April 2020 Guide: Dr. Ashok Kumar Nallathambi, Department of Mechanical Engineering, NIT-Trichy

Project: **Investigation and comparison of cooling characteristics of cracked and uncracked aluminium plates during quenching.**

- Investigation is done by heating five identical aluminium plates followed by quenching.
- FEM based non-iterative approach has been implemented to solve inverse heat transfer problem in order to determine heat flux and temperature distribution on the quenched side.

May'19 – Jul'19 Research Assistant, Dr. Pushpa C N, Department of Computer Science and Engineering, UVCE.

Project: **Query Recommendation system to support exploratory search.**

- Queries are extracted from search engine logs using machine learning. Next, the queries are used to build a search goal shift graph.
- The random walk algorithm is finally used to obtain the query recommendations in the search goal shift graph. Word2Vec, Semantic Regularization have been incorporated into the model.

Industry

Jul'20 – Present Position – **Deep Learning and NLP Engineer at AIDesign PVT LTD. – Full Time**

- Developing end to end Deep Learning models to solve real-world fluid flow and CFD problems at a significantly faster rate compared to commercial software.
- Successfully deployed Deep Learning applications so as to facilitate end user seamlessly make use of Deep Learning methods to solve engineering problems by making predictions on complex problem statements in a matter of seconds.
- Developed a DNN that predicts desired parameters on several engineering and mathematical problems with less than 5% relative error on loading conditions up to 30 times (30x) those seen in training.
- Developed a CNN model to predict temperature contours with less than 10% relative error for 2-D heat conduction problems on materials and domain sizes which the model has not seen in training.

May'20-Jul'20 Position – **Deep Learning Internship – Techionary**.

- Led a team in completing a real-world Deep Learning project right from crawling a custom dataset to incorporating a Deep Convolutional Neural Network.
- Proposed model was able to detect patients with potential symptoms of COVID-19 based on their medical history and chest x-ray image data. Model achieved validation accuracy of 96.7% and aims to facilitate easier and reliable diagnosis.

Software Skill set

- Programming: C, C++, MATLAB, Python.
- **Deep learning frameworks (Certified)**
  TensorFlow, Keras
- **Data analysis and Visualization (Certified)**
  Pandas, Numpy Matlplotlib, ParaView, Mayavi.
- **Machine learning frameworks (Certified)**
  Scikit-learn
- Scientific computing: SciPy
- **Finite Element Analysis**: ANSYS Static Structural

Extra-curricular activities

- Active member of Dance Troupe, NIT-Trichy, An official, standalone dance group NITT.
- School cricket team captain and university cricket team player for inter college tournaments.
- Active NSS member (2016-2020)
- Marketing Team, Synergy'19 – The National level Mechanical Engineering Symposium.
- Events team, Pragyan'19 – The ISO 9001: 20121 certified techno-managerial fest of NIT-Trichy.