Puneet Kumar

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OBJECTIVE

A Ph.D. Research Scholar; passionate to derive simplified outputs through computational research for real-life problems; seeking visiting research position in interdisciplinary academic research lab.

RESEARCH INTERESTS

- Multimodal Emotion Analysis & Affective Computing
- Machine Learning & Deep Learning
- Image-Text-Speech Processing
- Metaheuristic Optimization Techniques

EDUCATION

Ph.D. [**Computer Science**] **(pursuing)**, Jul 2018 onwards   CGPA: 9.00/10

Indian Institute of Technology, Roorkee, Uttrakhand, India.
Thesis Area: *Multi-modal Emotion Analysis*
Supervisor: Prof. R. Balasubramanian

M.E. [**Computer Science**], Jul 2016 - Jun 2018   CGPA: 9.38/10

Thapar Institute of Engineering & Technology, Thapar University, Patiala, Punjab, India.
Thesis Topic: *Meta-heuristic based Optimization of Deep Neural Networks*
Supervisor: Dr. Shalini Batra

B.E. [**Computer Science**], June 2010 - May 2014   CGPA: 7.47/10

Manipal Institute of Technology, Manipal University, Manipal, Karnataka, India.

PROFESSIONAL EXPERIENCE

Visiting Researcher   Dec 2019

Osaka Prefecture University (OPU), Osaka, Japan.
Worked at the Department of Computer Science and Intelligent Systems, OPU, Osaka, Japan, under Japan Science and Technology Sakura Science Plan.

Visiting Researcher   Jul 2018 - Jun 2019

Samsung R&D, New Delhi, India.
Worked on 'End to End Emotional Speech Synthesis' project, sponsored by Samsung R&D, in the investigation of Prof. R. Balasubramanian, IIT Roorkee.

Associate Application Engineer   May 2014 - May 2016

Oracle India Pvt. Ltd., Hyderabad, Telangana, India.
Worked with the Software Development team for the sustenance of a project management tool 'Oracle Primavera P6 Professional'.

Project Intern   Jan 2014 - May 2014

Oracle India Pvt. Ltd., Hyderabad, Telangana, India.
Worked with the Software Testing team for the quality assurance of 'Oracle Primavera P6 Enterprise Project Portfolio Management Web'.

TECHNICAL SKILLS

Programming Languages	: C/C++ (proficient), Python (proficient), R (proficient), Core Java (acquainted), Pascal (acquainted), Delphi (acquainted).
Development Tools	: MATLAB, TensorFlow, PyTorch, Keras, Anaconda, PyCharm, Spyder, RStudio, Weka, Code::Blocks, Eclipse, Visual Studio.
Database	: Oracle DB server, Oracle XE, Microsoft SQL DB Server, Oracle SQL Developer, Microsoft SQL Management Studio.
Web Development	: HTML, CSS, PHP (acquainted), JavaScript (acquainted).
Others	: LaTeX, Rattle, Oracle P6 EPPM, Microsoft Project, Microsoft Azure, Android Development (prior experience).

PUBLICATIONS

1. **Puneet Kumar**, Sidharth Jain, Balasubramanian Raman, Partha Pratim Roy and Masakazu Iwamura. "End-to-end Triplet Loss based Emotion Embedding System for Speech Emotion Recognition." International Conference on Pattern Recognition (ICPR 2020) [Communicated].

2. **Puneet Kumar**, Kshitij Pathania and Balasubramanian Raman. "Domain Adaptation based technique for Sanskrit text sentiment analysis with insufficient labeled data." International Conference on Computational Linguistics (COLING 2020) [Communicated].

3. **Puneet Kumar**, Shalini Batra, Balasubramanian Raman. "Deep neural network hyperparameter tuning through two-fold genetic approach." Springer Soft Computing (SoCo) Journal [Communicated].

4. Ankit Sharma, **Puneet Kumar**, Vikas M, Nagasai M, Kishore K, Sriram K, Balasubramanian Raman and Partha Pratim Roy. "Fast Griffin Lim based Waveform Generation Strategy for Text-to-Speech Synthesis." Springer Multimedia Tools and Applications (MTAP) Journal.

5. Sourav Sahoo, **Puneet Kumar**, Balasubramanian Raman and Partha Pratim Roy. "A Segment Level Approach to Speech Emotion Recognition using Transfer Learning." The Asian Conference on Pattern Recognition (ACPR 2019).

6. J. Jaiswal, A. Chaubey, B. Reddy, S. Kashyap, **Puneet Kumar**, Balasubramanian Raman and Partha Pratim Roy. "A Generative Adversarial Network based Ensemble Technique for Automatic Evaluation of Machine Synthesized Speech." The Asian Conference on Pattern Recognition (ACPR 2019).

7. **Puneet Kumar**, Sahil Garg, Amritpal Singh, Shalini Batra, Neeraj Kumar and Ilsun You. "MVO-Based 2-D Path Planning Scheme for Providing Quality of Service in UAV Environment." IEEE Internet of Things Journal.

8. **Puneet Kumar** and Shalini Batra. "Meta-heuristic based Optimized Deep Neural Network for Streaming Data Prediction." International Conference on Advances in Computing, Communication Control and Networking (ICACCCN 2018).

TEACHING EXPERIENCE

Teaching Assistant

- Instructor: Prof. R. Balasubramanian   Jan 2020 - May 2020
  CSN 106 - Discrete Structures - Tutorial Class
  V Sem, B.Tech., CSE, IIT Roorkee, India.

- Instructor: Prof. R. Balasubramanian   Jul 2019 - Nov 2019
  CSN 351 - Database Management System - Tutorial Class
  V Sem, B.Tech., CSE, IIT Roorkee, India.

- Instructor: Prof. R. Balasubramanian   Jan 2019 - May 2019
  CSN 102 - Data Structures - Tutorial Class
  II Sem, B.Tech., CSE & ECE, IIT Roorkee, India.

- Instructor: Dr. Shalini Batra   Jan 2018 - May 2018
  UCS 802 - Compiler Construction - Tutorial Class
  VIII Sem, B.E., CSE, TIET, Patiala, India.

- Instructor: Prof. R.K. Sharma   Jul 2017 - Nov 2017
  UCS 406 - Data Structures and Algorithms - Lab Session
  III Sem, B.E., Electronics & Computer Engg., TIET, Patiala, India.

OTHER PROJECTS

- *M.E. Thesis*   Jan-Jul'18
  Deep Neural Network Optimization using Meta-heuristic techniques
  Explored meta-heuristic techniques for the optimization of deep neural networks' hyper-parameters.

- *M.E. Capstone Project*   Aug-Dec'17
  Meta-Heuristic Optimization Based Path Planning in UAV Environment
  Proposed a Multi-Verse Optimizer (MVO) based path planning method for Unmanned Aerial Vehicles (UAV).

- *M.E. Minor Project*   Jan-May'17
  Image Classification on MNIST data using Deep Learning Models
  Trained a Convolution Neural Network in Python, and tested it to classify MNIST digit images.

- *Ensemble Machine Learning Project*   Mar-May'17
  Performed bagging, boosting, etc. ensembling methods for standard classification and regression models in R and RStudio.

- *Nature Inspired Optimization*   Jan-Feb'17
  Performed convergence plots and variance analysis using benchmark fitness functions for GA, PSO, etc.

- *Movie Recommender System*   Oct'16-Dec'17
  Built a recommender system in Python, to find the people with similar movie tastes, and make automatic recommendations.

- *Diabetes Prediction Using Machine Learning*   Jul-Sep'16
  Implemented machine learning models using R and Rattle and compared their statistical parameters for diabetes prediction.
- *Web Development Project*   June-July'13
  Developed a basic web-portal for CS Department using PHP. It was a part of the summer training program at HPES, Jaipur.
- *Digits Classifier*   Dec'12-Jan'13
  Made a Neural Network based program in MATLAB, to recognize handwritten digits. Tested with MNIST dataset.
- *Decidroid*   Oct'12
  Developed an Android Application that suggests a suitable choice according to multi-criterion decision principle.

WORKSHOP/TRAINING/CONFERENCES ATTENDED

1. Visited Osaka Prefecture University, Osaka, Japan under Japan Science and Technology Sakura Science Plan.   Dec 2019.
2. 4th International Conference on 'Computer Vision and Image Processing' (CVIP), MNIT Jaipur.   Sep 2019.
3. 4th Summar School on Machine Learning and Computer Vision, IIIT Hyderabad. July 2019.
4. Technical Session on 'Microsoft Azure Cloud Computing Platform', IIT Roorkee.   Apr 2019.
5. 11th Indian Conference on 'Computer Vision, Graphics and Image Processing' (ICVGIP), IIIT Hyderabad.   Dec 2018.
6. Workshop on 'Computer Vision and Image Processing', IIT Roorkee.   Mar 2018.
7. Short term course on 'Deep Learning and Applications', IIT Kanpur.   Jan 2017.

TALKS/WORKSHOPS DELIVERED

1. Conducted a training session on 'Sequence-to-sequence learning' during the course 'Deep Learning and Applications' at E&ICT Academy, IIT Roorkee.   Aug 2019.

2. Two days workshop on 'Deep Learning 101' during Thapar Summer School 2018 at Thapar Institute of Engineering and Technology, Patiala, Punjab.   Jun 2018

AWARDS

1. Institute Medal in M.E. (CSE).
2. MHRD Scholarships during M.E. and PhD.
3. Qualified GATE Computer Science (Rank 2205, percentile 97.91).
4. Qualified CBSE UGC NET Computer Science, Nov 2017.

HOBBIES & ACTIVITIES

Interests: Photography, Music, Audiobooks, Personal Finance, Meditation, Exercise & Nutrition, Travel, Volunteering, Philosophy, Psychology.

Memberships: IEEE student member, Manipal Cognitive Science Forum, Sakura Science Club: OPU Japan, Manipal Photography Club, Thapar Movie Goers Group, Hyderabad Cycling Club.

PERSONAL DETAILS

Father's Name	: Late Shri Narayan Kumar	Mother's Name	: Smt. Sushma Rani Babbar
Date of Birth	: Aug 30, 1991	Martial Status	: Married
Nationality	: Indian	Passport No.	: S2140966

Permanent Address: 3-B, Street No. 7, Setia Colony, Ganganagar, Rajasthan, India - 335001.

REFERENCES

Prof. R. Balasubramanian

Professor, CSE Department, Indian Institute of Technology, Roorkee, India.
E-mail: bala@cs.iitr.ac.in

Prof. Anil Kumar Verma

Professor, CSE Department, Thapar University, Punjab, India.
E-mail: akverma@thapar.edu

Prof. Harish SV

Professor, CSE Department, Manipal Institute of Technology, Karnataka, India.
E-mail: harish.sv@manipal.edu