Manish Shetty M

Research Fellow, Microsoft Research India
@ mmshetty.98@gmail.com | https://manishshettym.github.io

EDUCATION

- **PES University, Bangalore** Aug 2016 – May 2020
  B.Tech in Computer Science and Engineering *(Honors) with a Specialization in Data Science*
  . Cum. GPA: **9.51**/10
  . 6 time recipient of the **Dr. MRD Merit Scholarship**
  . A recipient of **Prof CNR Rao Scholarship** (top 2%)

WORK EXPERIENCE

- **Microsoft Research, Bangalore, India** July'20 – Present
  Research Fellow
  · Advisor: Chetan Bansal, Dr. Nachiappan Nagappan, and Dr. Thomas Zimmermann
  · Topics - Machine Learning, ML4SE, Deep Learning, Meta-Learning, AIOps
- **Microsoft Research, Bangalore, India** Jan'20 – June'20
  Research Intern
  · Advisor: Chetan Bansal, Dr. Nachiappan Nagappan, and Dr. Thomas Zimmermann
  · Topics - Machine Learning for Software Engineering, Deep Learning, Multi-Task Learning
- **Deloitte Touche Tohmatsu LLC, Bangalore, India** June'19 – Aug'19
  ML Research Intern
  · Advisor: Dr. Vikram Venkateshwaran
  · Topics - Machine Learning, Unsupervised Learning, Security

PUBLICATIONS

* – EQUAL CONTRIBUTIONS

- **Neural Knowledge Extraction from Cloud Service Incidents** *[arxiv]*
  Manish Shetty, Chetan Bansal, Sumit Kumar, Nikitha Rao, Nachiappan Nagappan and Thomas Zimmermann
  Under review in *International Conference on Software Engineering* ***(ICSE - SEIP)*** *2021*
  🏆 **Featured in VentureBeat** - *Microsoft's SoftNER AI uses unsupervised learning to help triage cloud*
- **Exploration and Comparison of Modern AI Algorithms to Predict Drug Efficacy** *[paper]*
  Manish Shetty, Anish Kasi, Roshan Neil, Vidhya Murali, Prashanth Athri, Gowri Srinivasa
  In *IEEE International Conference on Electronics, Computing and Communication Technologies* ***(CONNECT)*** *2020*
- **Denoising and Segmentation of Epigraphical Estampages by Multi Scale Template Matching and Connected Component Analysis** *[paper]*
  P. Preethi*, Anish Kasi*, **Manish Shetty***, H. R. Mamatha
  In *Procedia Computer Science , Volume 171, 2020*
- **Multiscale Template Matching to Denoise Epigraphical Estampages** *[paper]*
  P. Preethi*, Anish Kasi*, **Manish Shetty***, H. R. Mamatha
  In *Advances in Intelligent Systems and Computing, Volume 1034, 2020*

PATENTS

- **Automatic Recognition of Entities Related to Cloud Incidents** filed with the USPTO June 19, 2020
  Inventors: **Manish Shetty**, Chetan Bansal, Sumit Kumar, Nikitha Rao, Nachiappan Nagappan and Thomas Zimmermann

RESEARCH EXPERIENCE

- **Meta-Learning for Few-Shot Command Retrieval from Troubleshooting-Guides** Sept'20 – Present
  Advisors: Chetan Bansal, *Microsoft Research India*
  . Framed the the command extraction problem as a multi-class sentence classification task.
  . Working on using a meta-learning approach to learn to classify from few weakly labeled examples.

- **Neural Knowledge Extraction from Cloud Service Incidents** Jan'20 – Jul'20
  Advisors: Chetan Bansal, Dr. Nachiappan Nagappan, and Dr. Thomas Zimmermann, *Microsoft Research India*
  . Built **SoftNER** - a framework for unsupervised knowledge extraction from service incident reports and framed the knowledge extraction problem as a Named-Entity Recognition task.
  . Approach was to develop a framework that is domain agnostic and extensible to various teams and their domain specific entities, without any manual labeling.
  . Proposed a multi-task, data type aware model for extraction of named-entities from incidents that out-performed state-of-the-art NER models on this domain. Also showed that extracted entities can be used as features to improve incident triage models.

- **Exploration and Comparison of Modern AI Algorithms to Predict Drug Efficacy** Sept'19 – May'20
  Bachelor Thesis, Advisors: Dr. Gowri Srinivasa, *PES University*
  . Worked on improving the critic in ReLeaSE - reinforcement learning framework for de-novo drug design.
  . Approached the problem with a 2 pronged strategy. Proposed use of inherent hierarchical structures in SMILE strings and path-context based encoding for compound representation. Also, showed that simpler classifiers with this representation can out-perform the complex LSTM predictor in the original framework.
  . This work was supported by the Ministry of Science and Technology and accepted at *IEEE CONNECT 2020.*

- **Denoising and Segmentation of Epigraphs** Sept'18 – May'19
  Advisors: Dr. Mamatha H R, *PES University*
  . Worked on denoising and segmentation for deciphering engraved inscriptions. Proposed an algorithm that utilizes a noise template and is inspired by a CNN - Multi Scale Template Matching, to create a mask of noise in the image.
  . In a following attempt, to overcome the limitations of a fixed prior template, inferred a character's area using projections and histogram smoothing. Proposed that a factor of this area can be set as a lower bound for Connected-Components denoising and segmentation.
  . This work resulted in 2 publications in - Elsevier's *Procedia Computer Science Journal - 2020* (H-index:59) & Springer's *Advances in Intelligent Systems and Computing - 2020* (H-index:34).

RELEVANT COURSES

Deep Learning • Machine Learning + Practicum • Natural Language Processing • Linear Algebra • Research Methodology • Introduction to Data Science • Data Analytics • Discrete Mathematics and Logic • Algorithms + Practicum • Advanced Algorithms • Engineering Mathematics I • Engineering Mathematics II