Manish Shetty M

Research Fellow, Microsoft Research India
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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, Deep Learning, Meta-Learning, ML4SE, 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 service outages*
- **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

- **Mining Entity Relations from Incident Reports** *Dec'20 – Present*
  Advisors: Chetan Bansal, *Microsoft Research India*
  . Exploring mining direct and indirect entity-relations from incident reports.
  . This project is an extension to ***Soft*NER**.

- **Meta-Learning for Few-Shot Command Extraction from Troubleshooting-Guides** *Sept'20 – Present*
  Advisors: Chetan Bansal, *Microsoft Research India*
  . Formulated 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*
  . Proposed & built ***Soft*NER**– a framework for unsupervised knowledge extraction from service incident reports.
  . Framed the problem as a domain agnostic and extensible **Named-Entity Recognition** task.
  . Proposed a **Multi-task**, data-type aware **Bi-LSTM-CRF** model with **Attention mechanism**.
  . Also showed that extracted entities can be used as features to improve and simplify incident triage models.
  . This work has been submitted to ***ICSE 2021*** and featured in ***VentureBeat***.

- **Exploration and Comparison of Modern AI Algorithms to Predict Drug Efficacy** *Sept'19 – May'20*
  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 - Improved learning representation & simplify classifiers.
  . Proposed use of inherent hierarchical structures in SMILE string representation and path-context based encoding.
  . Also, showed that simpler classifiers with this representation can out-perform existing LSTM predictor.
  . 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 utilizing a noise template inspired by a CNN - Multi Scale Template Matching.
  . This was was published in Elsevier's ***Procedia Computer Science Journal 2020*** (H-index:59).
  . Following that, overcame limitations of a fixed prior template by inferring noise as a factor of a character's area.
  . This work was published in ***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