

Manish Shetty M

Research Fellow, Microsoft Research India

🏠 <https://manishshettym.github.io>

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🎓 Google Scholar

Education

PES University, Bangalore

Aug'16 – May'20

B.Tech in Computer Science and Engineering (Honors) | Specialization in Data Science

Cum. GPA: 9.51/10

Dr. MRD Merit Scholarship & Prof CNR Rao Scholarship (top 2%) for academic performance. 🏆

Work Experience

Microsoft Research, Bangalore, India

July'20 – Present

Research Fellow

Advisors: [Chetan Bansal](#), [Dr. Suman Nath](#), [Dr. Thomas Zimmermann](#), [Dr. Nachiappan Nagappan](#)

Microsoft Research, Bangalore, India

Jan'20 – June'20

Research Intern

Advisors: Chetan Bansal, [Dr. Nachiappan Nagappan](#), Dr. Thomas Zimmermann

Deloitte Touche Tohmatsu LLC, Bangalore, India

June'19 – Aug'19

ML Research Intern

Advisor: [Dr. Vikram Venkateshwaran](#)

Publications

SoftNER: Mining Knowledge Graphs From Cloud Incidents [pdf]

Under Submission

Manish Shetty, C. Bansal, S. Kumar, N. Rao, N. Nagappan

Preprint (15 pages)

Neural Knowledge Extraction from Cloud Service Incidents [pdf]

ICSE 2021

Manish Shetty, C. Bansal, S. Kumar, N. Rao, N. Nagappan and T. Zimmermann

43rd International Conference on Software Engineering - SEIP, 2021 (12 pages)

Acceptance Rate \approx 34% | Featured in [VentureBeat](#) 🏆

Nominated for the IEEE Software Distinguished Paper Award 🏆

A Machine Learning Understanding of Sepsis [pdf]

EMBC 2021

Manish Shetty, V. Menon, P. Athri, G. Srinivasa

43rd International Conference of the IEEE Engineering in Medicine and Biology Society (5 pages)

Exploration and Comparison of Modern AI Algorithms to Predict Drug Efficacy [pdf]

CONECCT 2020

Manish Shetty, A. Kasi, R. Neil, V. Murali, P. Athri, G. Srinivasa

6th IEEE International Conference on Electronics, Computing and Communication Technologies, 2020

Academic Service

> Reviewer Mentee (invited) 🏆

10th International Conference on Learning Representations 2022 [ICLR'22]

> Shadow Program Committee 🏆

18th Mining Software Repositories Conference 2021 [MSR'21]

> Reviewer

Journal of Software Engineering Research and Development [JSERD]

Patents

Automatic Recognition of Entities Related to Cloud Incidents filed with the USPTO

June 19, 2020

Manish Shetty, C. Bansal, S. Kumar, N. Rao, N. Nagappan, T. Zimmermann

Automation of Troubleshooting Guides using Meta-Learning filed with the USPTO

June 28, 2021

Manish Shetty, C. Bansal, P. Kapoor, T. Sharma, R. Mittal, A. Malhotra

Improving developer documentation using ML and NLP

Filing in Progress

A. Gupta, C. Bansal, Manish Shetty

Research Experience

- **Meta-Learning for Few-Shot Command Extraction**

Nov'20 – Present

Advisors: [Chetan Bansal](#), Microsoft Research

- > 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.

- **SoftNER: Mining Knowledge Graphs From Cloud Incidents**

Dec'20 – Feb'20

Advisors: [Chetan Bansal](#), Microsoft Research

- > Extended SoftNER by mined **binary entity relations** and scoring them using **normalized PMI**.
- > Used entities and relations to construct an incident **knowledge-graph**.
- > Used a combination of **clustering** and a novel **path based score** to identify entity-incident relevance.
- > Under submission at *Empirical Software Engineering* journal

- **Neural Knowledge Extraction from Cloud Service Incidents**

Jan'20 – Aug'20

Advisors: [Chetan Bansal](#), [Dr. Nachiappan Nagappan](#), and [Dr. Thomas Zimmermann](#), Microsoft Research

- > Designed & built **SoftNER**– a framework for weak-supervised knowledge extraction from service incident reports.
- > Framed the problem as a domain agnostic and extensible **named-entity recognition** task.
- > Proposed a **Multi-task Bi-LSTM-CRF** model with attention mechanism.
- > SoftNER is now integrated into Microsoft IcM system and has enriched over 9K+ incidents.
- > This work was accepted at *ICSE 2021*(Acceptance Rate \approx 34%) and featured on [VentureBeat](#).

- **A Machine Learning Understanding of Sepsis**

Jan'20 – Jun'20

Advisors: [Dr. Gowri Srinivasa](#), PES University

- > Proposed an approach to predict two outcomes in sepsis patients - **Sepsis Severity** and **Comorbidity Severity**.
- > Used **local interpretable model-agnostic explanations** and other methods to analyze models.
- > Harmonized consistencies/contradictions about Sepsis, between expert human knowledge and that of a model.
- > Under submission at *Engineering in Medicine and Biology Society*

- **Exploration and Comparison of Modern AI Algorithms to Predict Drug Efficacy**

Sept'19 – Feb'20

Advisors: [Dr. Gowri Srinivasa](#), PES University

- > Worked on improving the critic in **ReLeaSE - Reinforcement learning framework for de-novo drug design**.
- > Improved learning using path-context based encoding and data-augmentation for canonical SMILES.
- > Showed simpler classifiers like random-forest can be better critics than the original LSTM in ReLeaSE.
- > This work was accepted at *IEEE CONNECT 2020*.

- **Denoising and Segmentation of Epigraphs**

Sept'18 – May'19

Advisors: [Dr. Mamatha H R](#), PES University

- > Proposed algorithms utilizing noise templates to denoising engraved inscriptions.
- > Work on fixed prior noise template-matching was published in *Springer's AISC 2020* [[pdf](#)].
- > Work on inferring noise as a factor of character area was published in *Elsevier's PCS 2020* [[pdf](#)].

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