

Manish Shetty M

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

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
Advisor: [Chetan Bansal](#), [Dr. Nachiappan Nagappan](#), and [Dr. Thomas Zimmermann](#)
Topics - Machine Learning, NLP, Information Extraction, 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

Academic Service

- **Shadow Program Committee** 🏆 *Mining Software Repositories (MSR 2021)*
- **Reviewer** *Journal of Software Engineering Research and Development (JSERD)*

Publications

- **Mining Knowledge Graphs from Incident Reports** [paper]
[Manish Shetty](#), [Chetan Bansal](#)
Under submission @ International Conference on Mining Software Repositories (MSR) 2021 (5 pages)
- **Neural Knowledge Extraction from Cloud Service Incidents** [paper]
[Manish Shetty](#), [C. Bansal](#), [S. Kumar](#), [N. Rao](#), [N. Nagappan](#) and [T. Zimmermann](#)
43rd International Conference on Software Engineering (ICSE) - SEIP, 2021 (12 pages)
[Acceptance Rate \approx 34%] [Presenter]
🏆 **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](#), [A. Kasi](#), [R. Neil](#), [V. Murali](#), [P. Athri](#), [G. Srinivasa](#)
6th IEEE CONECCT, 2020 (5 pages) [Presenter]
- **Denoising and Segmentation of Epigraphical Estampages by Multi Scale Template Matching and Connected Component Analysis** [paper]
[P. Preethi*](#), [A. Kasi*](#), [Manish Shetty*](#), [H. R. Mamatha](#)
Procedia Computer Science, Volume 171, 2020 (10 pages)
- **Multiscale Template Matching to Denoise Epigraphical Estampages** [paper]
[P. Preethi*](#), [A. Kasi*](#), [Manish Shetty*](#), [H. R. Mamatha](#)
Advances in Intelligent Systems and Computing, Volume 1034, 2020 (6 pages)

* – equal contributions

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 Extraction** *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.
- **Mining Knowledge Graphs from Incident Reports** *Dec'20 – Present*
Advisors: Chetan Bansal, Microsoft Research India
 - > Mined **binary entity relations**, scored them using **Normalized PMI**, and constructed a **knowledge-graph**.
 - > Mapped entity subsets to clustered incident titles using the knowledge-graph.
 - > To be used as an extension to **SoftNER**, to recommend relevant entity sub-sets to a new incident.
 - > This work has been submitted to **MSR 2021**.
- **Neural Knowledge Extraction from Cloud Service Incidents** *Jan'20 – Jul'20*
Advisors: Chetan Bansal, Dr. Nachiappan Nagappan, and Dr. Thomas Zimmermann, Microsoft Research
 - > Designed & built **SoftNER**– 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.
 - > **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**.
- **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 **Elsevier's PCS 2020**.
 - > Work on inferring noise as a factor of character area was published in **Springer's AISC 2020**.

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