Chandra Sekhar Maddila

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EXPERIENCE (~11.5 YEARS)

SEPTEMBER 2013 – PRESENT
PRINCIPAL RESEARCH ENGINEER, MICROSOFT RESEARCH, REDMOND, USA

I work for applied sciences group at Microsoft Research. My primary interest areas are software engineering, dev tools, and developer productivity. I work on applications of machine learning (ML) and information retrieval (IR) methods to solve software engineering problems, at scale. I lead projects and build large-scale, distributed data platforms and services that enable various applications of ML and IR for solving software engineering problems.

JULY 2012 – AUGUST 2013
SOFTWARE ENGINEER, CA TECHNOLOGIES, HYDERABAD, INDIA

Part of a research group that built various automation / orchestration products and services. These services are widely used by the customers to manage their IT infrastructure and DevOps efficiently.

MAY 2010 – JUNE 2012
RESEARCH ENGINEER, CONVERGYS, HYDERABAD, INDIA

Part of 'Forward R&D' team. Worked on next gen billing and rating products / services used by major telecom companies and ISPs across the world.

EDUCATION

2015 – 2017
MASTER OF TECHNOLOGY (M. TECH), BITS-PILANI, INDIA

Software Systems, Data Analytics. CGPA: 8.35.

2006 – 2010
BACHELOR OF TECHNOLOGY (B. TECH), JNTU-KAKINADA, INDIA

Computer science and Engineering. Percentage: 74.8.

SELECTED PROJECTS

Some of the research projects I led / worked on:

- Project Sankie (Podcast)
  Cofounded Project Sankie. Sankie is large-scale AIOps data platform, which provides the necessary infrastructure to ingest data from software repositories and services, train machine learning models on the data, and eventually perform decorations or provide information to engineers to help increase the velocity and throughput of changes, bug fixes etc.
  Sankie platform is widely used in Microsoft. Till now, Sankie helped *reducing the completion time of pull requests by ~ 40% (P 99), prevented ~3K bugs from slipping into the production systems*.

- Nudge (VentureBeat)
  Invented Nudge, which is a large-scale machine learning-based cloud service for accelerating pull request completion time by reminding the author or the reviewer(s) to engage with their overdue pull requests. *Nudge helped in increasing the velocity of change progression by ~60%.*
- Project Sangam (Time magazine)
  Part of a team that developed a research project named massively empowered classrooms (MEC), which upon acquisition by a product group renamed to Project Sangam. MEC is an experimental project designed to explore how online educational content and techniques in blended learning can be used for undergraduate education in India.
  Sangam has helped train *110,000+ municipal functionaries across 4,000+* cities on best sanitation practices.
  The Learning Passport, which is another incarnation of MEC, allows educators to upload local curricula. First deployed in Timor-Leste in 2020, the Learning Passport now has close to *1.6 million users in 13 countries*

AWARDS, INVITED TALKS, MEDIA

1. Winner of **Jay Lepreau best paper award** in *USENIX OSDI*, for the year 2018**.**
2. Invited talk on differential bug localization (ORCA) at *USENIX Annual technical Conference (ATC)*. USENIX ATC '19 - Orca: Differential Bug Localization in Large-Scale Services - YouTube
3. *Invited talk on AIOps in continuous software engineering. University of Victoria.* AIOps in Continuous Software Engineering: A Q&A with Chandra Maddila - YouTube
4. Featured in prestigious tech magazine *VentureBeat*. Microsoft's Nudge service leverages AI to speed up completion of pull requests | VentureBeat
5. SPACE framework in *Business Insider, InfoQ, and GitHub blog*. GitHub Creates SPACE Framework for Developer Productivity (businessinsider.com), SPACE, a New Framework to Understand and Measure Developer Productivity (infoq.com), Measuring enterprise developer productivity - The GitHub Blog
6. Featured in prestigious *Microsoft Research Podcast series*. Podcast: Can we make better software by using ML and AI techniques? With Chandra Maddila and Chetan Bansal - Microsoft Research

PUBLICATIONS AND PATENTS

1. *Chandra Maddila,* Chetan Bansal, Nachiappan Nagappan: *Predicting pull request completion time: a case study on large scale cloud services.* ESEC/SIGSOFT FSE 2019
2. Ranjita Bhagwan, Rahul Kumar, *Chandra Shekhar Maddila*, Adithya Abraham Philip*: Orca: Differential Bug Localization in Large-Scale Services.* OSDI 2018. **Jay Lepreau best paper award**
   Author names are listed in the order of last names.
3. *Chandra Maddila*, Sai Surya Upadrasta, Chetan Bansal, Nachiappan Nagappan, Georgios Gousios, Arie van Deursen: *Nudge: Accelerating Overdue Pull Requests Towards Completion*. TOSEM.
4. *Chandra Maddila,* Nachiappan Nagappan, Christian Bird, Georgios Gousios, Arie van Deursen: ConE: A Concurrent Edit Detection Tool for Large Scale Software Development. TOSEM.
5. Nicole Forsgren, Margaret Anne Storey, *Chandra Maddila*, Thomas Zimmermann, Brian Houck, Jenna Butler:
   The SPACE of Developer Productivity: There's more to it than you think. Volume 19, January-February 2021, Association for Computing Machinery (ACM). ACM Queue.
6. Rahul Kumar, Chetan Bansal, *Chandra Maddila*, Nitin Sharma, Shawn Martelock, Ravi Bhargava*: Building sankie: an AI platform for DevOps.* BotSE@ICSE 2019

7. Adithya Abraham Philip, Ranjita Bhagwan, Rahul Kumar, *Chandra Maddila*, Nachiappan Nagappan*: FastLane: test minimization for rapidly deployed large-scale online services. ICSE 2019*
8. Sumit *Asthana,* Rahul Kumar, Ranjita Bhagwan, Christian Bird, Chetan Bansal, *Chandra Maddila*, Sonu Mehta, B. Ashok*: WhoDo: automating reviewer suggestions at scale. ESEC/SIGSOFT FSE 2019*
9. Denae Ford Margaret-Anne Storey, Tom Zimmermann, Christian Bird, Sonia Jaffe, *Chandra Maddila*, Jenna Butler, Brian Houck, Nachi Nagappan: *A Tale of Two Cities: Software Developers Working from Home During the COVID-19 Pandemic*. TOSEM.
10. Ranjita Bhagwan, Rahul Kumar, *Chandra Sekhar Maddila*, Adithya Abraham Philip*: Orca: Differential Bug Localization in Large-Scale Services. USENIX Annual Technical Conference 2019*
11. Shruti Rijhwani, Royal Sequiera, Monojit Choudhury, Kalika Bali*, Chandra Sekhar Maddila: Estimating Code-Switching on Twitter with a Novel Generalized Word-Level Language Detection Technique. ACL 2017*
12. Nikitha Rao, Chetan Bansal, Subhabrata Mukherjee, *Chandra Maddila*: *Product Insights: Analyzing Product Intents in Web Search*. CIKM 2020
13. Chetan Bansal, Pantazis Deligiannis, *Chandra Maddila*, Nikitha Rao: *Studying Ransomware Attacks Using Web Search Logs*. SIGIR 2020
14. Chandra Maddila, Apoorva Agrawal, Thomas Zimmermann, Nicole Forsgren, Kim Herzig, Arie van Deursen: *Nalanda: A Socio-Technical Graph for Building Software Analytics Tools at Enterprise Scale*. arxiv.
15. Detecting Misconfiguration and/or Bug (s) in Large Service (s) Using Correlated Change Analysis, USPTO App 16515135

ACADEMIC SERVICE

1. Program committee, Mining Software Repositories – 2021.
2. Program committee, SER&IP, International Conference on Software Engineering – 2021.
3. Reviewer – IEEE Transactions on Software Engineering (TSE), Empirical Software Engineering (EMSE)