Rangeet Pan

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SUMMARY

Rangeet Pan is a Ph.D. candidate at the Department of Computer Science at Iowa State University. His supervisor is **Dr. Hridesh Rajan** from Iowa State University. He has worked with **Nachiappan (Nachi) Nagappan**, **Sumit Gulwani**, **Shuvendu Lahiri**, and **Vu Le** from Microsoft Research during the **summer internship** at **Microsoft Research** in 2020. His research interests are in the field of Software Engineering focusing on Deep Learning, Modularity, and Program Analysis.

His works are focused on understanding the characteristics of deep learning software and applying various programming techniques, e.g., enabling decomposition in deep learning-based models. His works are published at the top research venues, **ESEC/FSE and ICSE**. His work on decomposing deep neural networks into modules has been awarded the **ACM SIGSOFT Distinguished Paper** awards at ESEC/FSE, 2020. He has won **2nd place at the ACM Student Research Competition** at ICSE, 2020. He has also been awarded the **Research Excellence** award and **Robert Stewart Early Research Recognition** from the Department of Computer Science at Iowa State University.

He served as Web Chair for SPLASH, 2020 and 2021. He has reviewed several papers from the **IEEE Transactions on Software Engineering (TSE), Mining Software Repository 2021, and Springer Empirical Software Engineering** as an external reviewer.

PROFESSIONAL EXPERIENCE

Iowa State University – Graduate Research Assistant   (Aug 18 – Present)
Previously Graduate Teaching Assistant for COMS 319, 309, and 342
Teaching as an independent instructor for COMS 342 (Principles of Programming Languages) in Spring 2022 (60+ students).

Microsoft Research - Intern – Software Analysis and Intelligence Group (SAINTes)   (May 20 - Aug 20)
Mentor: Dr. Nachiappan (Nachi) Nagappan.

University of Houston - Research Assistant – Measurement and Evaluation group.   (Jan 17 - May 18)

Infosys Limited - Test Engineer   (March 13 - July 16)

EDUCATION

Iowa State University – Ph.D.   (Aug 18 – Present)
GPA: 3.89

University of Houston – M.S.   (Aug 16 - May 18)
GPA: 3.93

PUBLICATIONS

ICSE: International Conference on Software Engineering and **ESEC/FSE**: European Software Engineering Conference and Symposium on the Foundations of Software Engineering.

1. Rangeet Pan and Hridesh Rajan. "Decomposing Convolutional Neural Network into Reusable and Replaceable Modules.", **ICSE, 2022.**

2. Giang Nguyen, Md Johirul Islam, Rangeet Pan, and Hridesh Rajan. "Manas: Mining Software Repositories to Assist AutoML.", **ICSE, 2022.**

3. Rangeet Pan, Vu Le, Nachiappan Nagappan, Sumit Gulwani, Shuvendu Lahiri, and Mike Kaufman. "Can Program Synthesis be Used to Learn Merge Conflict Resolutions? An Empirical Analysis.", **ICSE, 2021**.

4. Rangeet Pan and Hridesh Rajan. "On Decomposing a Deep Neural Network into Modules.", **ESEC/FSE, 2020** (**ACM SIGSOFT Distinguished Paper Award**).

5. Rangeet Pan. "Does Fixing Bug Increase Robustness in Deep Learning?.", **ICSE SRC, 2020** (**2nd place at Student Research Competition**).

6. Md Johirul Islam, Rangeet Pan, and Hridesh Rajan. "Repairing Deep Neural Networks: Fix Patterns and Challenges.", **ICSE, 2020**.

7. Rangeet Pan. "Static deep neural network analysis for robustness.", **ESEC/FSE SRC, 2019**.

8. Md Johirul Islam, Giang Nguyen, Rangeet Pan, and Hridesh Rajan. "A Comprehensive Study on Deep Learning Bug Characteristics.", **ESEC/FSE, 2019**.

9. Rangeet Pan, Md Johirul Islam, Shibbir Ahmed, and Hridesh Rajan. "Identifying Classes Susceptible to Adversarial Attacks.", arXiv preprint arXiv:1905.13284 (2019).

10. Md Johirul Islam, Hoan Anh Nguyen, Rangeet Pan, and Hridesh Rajan. "What Do Developers Ask About ML Libraries? A Large-scale Study Using Stack Overflow.", arXiv preprint arXiv:1906.11940 (2019).

NEWS COVERAGE

1. "Safe program merges at scale: A grand challenge for program repair research", Microsoft Research Blog, Aug, 2021. (https://www.microsoft.com/en-us/research/blog/safe-program-merges-at-scale-a-grand-challenge-for-program-repair-research/?OCID=msr_blog_Programinglanguages_tw)

2. "Two papers receive ACM SIGSOFT Distinguished Paper Award", Iowa State News, Aug, 2020. (https://www.cs.iastate.edu/two-papers-receive-acm-sigsoft-distinguished-paper-award)

3. "Pan earns 2nd Place at the ACM Student Research Competition at the International Conference on Software Engineering (ICSE)", Iowa State News, July, 2020. (https://www.cs.iastate.edu/pan-earns-2nd-place-acm-student-research-competition-international-conference-software-engineering)

4. "Huang, Khoshmanesh, and Pan win Robert Stuart Early Research Recognition Award", Iowa State News, May, 2020. (https://www.cs.iastate.edu/announcements/huang-khoshmanesh-and-pan-win-robert-stuart-early-research-recognition-award)

5. "Open data set to increase efficiency of COVID-19 research", Iowa State Daily, Apr, 2020. (https://tinyurl.com/yawbgaho)

6. "Two papers accepted at ICSE 2020 Research Track", Iowa State News, Dec, 2019. (https://www.cs.iastate.edu/two-papers-accepted-icse-2020-research-track)

7. "CS Students Showcase Entrepreneurship and Innovation", Iowa State News, Sep, 2019. (https://www.cs.iastate.edu/cs-students-showcase-entrepreneurship-and-innovation)

TEACHING EXPERIENCE

COMS 309 - Software Development Practices:– Teaching Assistant
- Graded, mentored 40+ students from a class of 300+ student.

COMS 319 - Construction of User Interfaces:- Teaching Assistant
- Assignment creation, grading, lab setup, mentoring students.

COMS 342 – Principles to Programming Languages: - Teaching Assistant and Co-Instructor.
- Recitation, assignment, and solution creation, mentoring students.
- Teaching as an **independent instructor** in Spring 2022 (60+ students).

CONFERENCE TALKS

"Can Program Synthesis be Used to Learn Merge Conflict Resolutions? An Empirical Analysis.", ICSE, 2021, virtual.

"On Decomposing a Deep Neural Network into Modules.", ESEC/FSE, 2020, virtual.

"Does Fixing Bug Increase Robustness in Deep Learning?.", ICSE, 2020, virtual.

"Static deep neural network analysis for robustness.", ESEC/FSE, 2019, Tallinn, Estonia

"A Comprehensive Study on Deep Learning Bug Characteristics.", ESEC/FSE 2019, Tallinn, Estonia

AWARDS AND RECOGNITION

"Research Excellence Award", Iowa State University, 2021.

"ACM SIGSOFT Distinguished Paper Award" ESEC/FSE, 2020, virtual.

"2nd Place at Student Research Competition.", ICSE, 2020, virtual.

"Robert Stewart Early Research Recognition Award", Iowa State University, 2020.

"ACM Travel Award", ESEC/FSE, 2019, Tallinn, Estonia.

"Merit Scholarship", Phi Beta Delta, University of Houston, 2017.

SERVICES

Program Committee Member, OOPSLA Artifact Track, 2021.

Shadow Program Committee Member, Mining Software Repositories (MSR), 2021.

Web Chair and Organizing Committee Member, SPLASH, 2021.

Web Chair and Organizing Committee Member, SPLASH, 2020.

External Reviewer, IEEE Transactions on Software Engineering.

External Reviewer, Springer Empirical Software Engineering Journal.

REFERENCES

Dr. Hridesh Rajan
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Dr. Nachi Nagappan
IEEE Fellow
Software Engineer
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