Rahul Yedida

Website :: GitHub :: LinkedIn :: Google Scholar

hello@ryedida.me

+1 (206) 660-7542

EDUCATION

North Carolina State University — Raleigh, NC
Ph.D. Computer Science – Advisor: Dr. Tim Menzies — Aug 2019 - Jul 2024

PES University — Bangalore, India
B.E. Computer Science — Aug 2015 - May 2019

EMPLOYMENT

LexisNexis Legal & Professional — Raleigh, NC
Senior Data Scientist I — May 2024 - Present

- Profiled LLM calls and fixed inefficiencies, leading to a 10% reduction in runtime.

Amazon — New York, NY / Bellevue, WA
Software Dev Engineer Intern — May 2023 - Aug 2023

- Implemented profile locks for Prime Video on Echo Show devices.
- **Technology:** React Native, TypeScript

Software Dev Engineer Intern — May 2022 - Jul 2022

- Developed a full-stack system to publish announcements in scorecards used by delivery service partners (DSPs).
- **Technology:** React/Redux, TypeScript, Redux Saga, DyanmoDB, Java Spring

North Carolina State University — Raleigh, NC
PhD Student — Aug 2019 - Present

- **State-of-the-art hyper-parameter optimization:** Proposed a novel hyper-parameter optimization method that outperforms prior work and is 200-700% faster.
- **Better, faster deep learning for SE:** Improved defect prediction by up to 123% (F-1 score), code smell detection by up to 30% (AUC), issue lifetime prediction by up to 76% (accuracy), automated microservice partitioning by up to 285% (modularity)
- **Semi-supervised learning:** Achieved state-of-the-art results (up to 100% improvement in AUC) on static code warnings analysis using 10% of the labels.
- **Teaching:** Teaching assistant for 830 students in total, over 5 semesters, for CSC 230 (C and Software Tools), CSC 510 (Software Engineering), and CSC 591/791 (Automated Software Engineering)

RECENT PUBLICATIONS

See full list on Google Scholar.

1. Baldassarre, M. T., Ernst, N., Hermann, B., Menzies, T., & **Yedida, R.** (2023). (Re)use of Research Results (is Rampant). *Communications of the ACM, 66(2), 75-81.*

2. **Yedida, R.**, Kang, H. J., Tu, K., Lo, D., & Menzies, T. (2023). How to Find Actionable Static Analysis Warnings: A Case Study with FindBugs. *IEEE Transactions on Software Engineering, (01), 1-17.*

3. **Yedida, R.**, Krishna, R., Kalia, A., Menzies, T., Xiao, J., & Vukovic, M. (2023). An Expert System for Redesigning Software for Cloud Applications. *Expert Systems with Applications.*

4. **Yedida, R.**, Menzies, T. (2022). How to Improve Deep Learning for Software Analytics (a case study with code smell detection). In *2022 IEEE/ACM 19th International Conference on Mining Software Repositories (MSR). IEEE, 2022.*

5. **Yedida, R.**, & Menzies, T. (2021). On the Value of Oversampling for Deep Learning in Software Defect Prediction. *IEEE Transactions on Software Engineering, doi: 10.1109/TSE.2021.3079841*

6. Agrawal, A., Yang, X., Agrawal, R., **Yedida, R.**, Shen, X., & Menzies, T. (2021). Simpler Hyperparameter Optimization for Software Analytics: Why, How, When?. *IEEE Transactions on Software Engineering, doi: 10.1109/TSE.2021.3073242*

7. Yang, X., Chen, J., **Yedida, R.**, Yu, Z., & Menzies, T. (2021). Learning to recognize actionable static code warnings (is intrinsically easy). *Empirical Software Engineering, 26(3), 1-24.*

8. **Yedida, R.**, Krishna, R., Kalia, A., Menzies, T., Xiao, J., & Vukovic, M. (2021). Lessons learned from hyper-parameter tuning for microservice candidate identification. *Proceedings of the thirty-sixth IEEE/ACM International Conference on Automated Software Engineering (ASE)*

9. **Yedida, R.**, & Saha, S. (2021). Beginning with Machine Learning: A Comprehensive Primer. *The European Physical Journal Special Topics*, 230(10), 2363-2444.

10. Saha, S., Nagaraj, N., Mathur, A., **Yedida, R.**, & Sneha, H. R. (2020). Evolution of novel activation functions in neural network training for astronomy data: habitability classification of exoplanets. *The European Physical Journal Special Topics, 229(16), 2629-2738.*

11. **Yedida, R.**, Saha, S., & Prashanth, T. (2020). LipschitzLR: Using theoretically computed adaptive learning rates for fast convergence. *Applied Intelligence, 1-19.*

12. Sridhar, S., Saha, S., Shaikh, A., **Yedida, R.**, & Saha, S. (2020, July). Parsimonious Computing: A Minority Training Regime for Effective Prediction in Large Microarray Expression Data Sets. In *2020 International Joint Conference on Neural Networks (IJCNN) (pp. 1-8). IEEE.*

13. Khaidem, L., **Yedida, R.**, & Theophilus, A. J. (2019, November). Optimizing Inter-nationality of Journals: A Classical Gradient Approach Revisited via Swarm Intelligence. In *International Conference on Modeling, Machine Learning and Astronomy (pp. 3-14). Springer, Singapore.*

Funding

$5,000, Google Cloud Academic Research Grant, Feb 2022

Service to Profession

Co-Chair, Workshop on Replications and Negative Results (RENE) at ASE 2024

Reviewer, TMLR 2024; ICML 2024; Neural Processing Letters 2023, 2024; Neural Computing & Applications (NCAA), 2023; Artificial Intelligence Review 2023; ICLR 2024; NeurIPS 2023; Journal of Big Data, 2023; Automated Software Engineering (ASE), 2023; Empirical Software Engineering (EMSE), 2021; IEEE Symposium Series on Computational Intelligence (SSCI) 2020

PC Member, AI Foundation Models and Software Engineering (FORGE) at ICSE 2024; Automated Software Engineering (ASE) Artifact Evaluation Track, 2022; International Conference on Software Maintenance and Evolution (ICSME) Artifact Evaluation Track, 2021, 2022, 2023; International Conference on Modeling, Machine Learning, and Astronomy (MMLA), 2019

Student Volunteer, Automated Software Engineering (ASE) '21

Honors and Awards

Google Cloud Champion Innovator - Cloud AI/ML, Jul 2023

Google Cloud Research Innovators Mentor, Dec 2022

Google Cloud Champion Innovator, Oct 2022

Google Cloud Research Innovator, Feb 2022

Invited Talks

Feb 2024, "*Improving deep learning performance using theoretical ML*" at BITS Pilani, KK Birla Goa Campus, India

Skills

Languages: Python, TypeScript, Java, C++

Frameworks: Flask, Keras, PyTorch, Node.js, React

Databases: MySQL, MongoDB, DynamoDB

Cloud: Google Compute Engine, RDS, S3, Google Cloud Storage, EC2