Rahul Yedida

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EDUCATION

North Carolina State University Raleigh, NC
Ph.D. Computer Science – Advisor: Dr. Tim Menzies *Aug 2019 - Exp. Dec 2023*

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

EMPLOYMENT

Amazon New York, NY
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 socrecards used by delivery service partners (DSPs).
- **Technology:** React/Redux, TypeScript, Redux Saga, DyanmoDB, Java Spring

North Carolina State University Raleigh, NC
Graduate Teaching Assistant *Aug 2022 - Apr 2023*

- TA (with 3 others) for 119 students for a graduate Automated Software Engineering course.
- TA (with 4 others) for 243 students for a graduate Software Engineering course.

Graduate Research Assistant *Jan 2020 - May 2022*

- **Better, faster deep learning for SE:** Improved defect prediction by up to 123% (F-1 score), code smell detection by up to 30% (AUC)
- **Semi-supervised learning:** Achieved state-of-the-art results on static code warnings analysis using 10% of the labels.

PUBLICATIONS

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.**, & Saha, S. (2021). Beginning with Machine Learning: A Comprehensive Primer. *The European Physical Journal Special Topics: 1-82.*

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.**, & 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*

9. **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)*

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, 2022

SERVICE TO PROFESSION

Reviewer, 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, 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, 2022

RELEVANT PROJECTS

Programmable Resumes   Aug 2023 - Present
Python   *GitHub*

Developed a specification and implementation for modular, customizable resumes with support for two popular LaTeX templates.

pysh   May 2021 - Present
C++, TMLanguage   *GitHub*

Developed a superset of Python that allows running Shell code natively, with a VS Code syntax highlighting extension.

RAISE   Aug 2020 - Present
Python, Keras   *GitHub :: PyPI*

Sole developer for a PEP8-compliant, ML Python package used by our research lab and others for replicable results. Downloaded 19k times.

Google/Meta Data Mining   Feb 2021 - May 2021
Python, Keras   *GitHub*

Data science project to use Google Takeout and Meta user data to suggest products to advertise to a user from Amazon best-sellers using DistilGPT-2, and achieved 0.6 F-1 score.

Threaded Discussions Website Feb 2021 - Jun 2021
MongoDB, Node.js, React [GitHub](#)

Companion website for video calls that allows for Reddit-style, threaded discussions.

NearConnect Nov 2020 - Mar 2021
iOS, SwiftUI [GitHub](#) :: [App Store](#)

iOS app to connect with people nearby using multicast peer-to-peer connections.

Novel Drug Repurposing Hypotheses Oct 2019 - Feb 2020
Python, PyTorch [GitHub](#)

Identified novel drug repurposing hypotheses using text mining of radio transcripts, and verified results.

Personalized Chatbot May 2019
Python, Keras [GitHub](#)

Fine-tuned a GPT-2 345M model on 730k messages from Telegram logs to create a personalized chatbot.

Intelligent Tutoring System Sep 2018 - May 2019
Python [GitHub](#)

Implemented an Intelligent Tutoring System backend using Bayesian Knowledge Tracing and a novel question selection algorithm.

Human Activity Data Project Oct 2018 - Nov 2018
Python, Keras [GitHub](#)

Collected personal activity data for 9 months, grouped tasks into 21 categories. Analyzed most productive hours of the day.

JournalBear Jan 2017 - Feb 2019
JavaScript, Electron [GitHub](#) :: [Softpedia](#)

Cross-platform journal application with AES-256 encryption. Rated 4/5 by Softpedia.

Results Scraper Mar 2018 - Aug 2018
MongoDB, Express.js, React, Node.js [GitHub](#)

Website for scraping university examination results and displaying charts and printable reports, with caching.

Video Sharing Website Oct 2017 - Dec 2017
MySQL, Express.js, React, Node.js, Sass, Elasticsearch [GitHub](#)

Simplified implementation of a video-sharing website with subscriptions and custom searching.

Xtreme Calculations Apr 2013 - Oct 2017
VB.NET, Python [Softpedia](#)

Windows math software to solve scientific and mathematical problems, with over 30k downloads across multiple sites.

Video Indexer Jun 2017 - Sep 2017
C++, Qt, Sphinx [GitHub](#)

Cross-platform desktop application to detect the time(s) a given keyword was spoken in a video.

Web development projects Jan 2017 - Nov 2017
MongoDB, Express.js, React, Node.js, Sass, D3.js [CodePen](#)

Projects include URL shortener, rogue-like dungeon crawler game, voting application, Simon game, land surface temperature heatmap, and mapping meteorite impacts across the globe.

SKILLS

Languages: Python, TypeScript, Java, C++

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

Databases: MySQL, MongoDB, DynamoDB