Rahul Yedida

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Education

North Carolina State University — Raleigh, NC
Ph.D. Computer Science - GPA: 3.9/4.0 — *Aug. 2019 – Present*

PES University — Bangalore, India
B.E. Computer Science - GPA: 7.9/10.0 — *Aug. 2015 – May 2019*

Employment

Amazon — Bellevue, WA
Software Dev Engineer Intern — *May 2022 – Jul 2022*

- Worked on publishing announcements in scorecards used by delivery service partners (DSPs).
- **Technology:** React, Redux Saga, AWS (ECS, DynamoDB), Java

North Carolina State University — Raleigh, NC
Graduate Research Assistant — *Jan. 2020 – May 2022*

- Better, faster deep learning for software engineering; V&V for AI systems; reuse in SE

Graduate Teaching Assistant — *Aug. 2019 – Jan. 2020*

- Held office hours for 54 undergraduate students and delivered lectures on C++.

Indian Institute of Astrophysics — Bangalore, India
Research Intern — *Jul. 2018 - Mar. 2019*

- **Image denoising:** Worked on image restoration of globular clusters using convolutional neural networks.
- **Research:** Proposed novel adaptive learning rate scheme for deep neural networks.

Publications

Yedida, R., Kang, H. J., Tu, K., Lo, D., & Menzies, T. (2022). How to Find Actionable Static Analysis Warnings. *arXiv preprint arXiv:2205.10504*

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.*.

Yedida, R., Krishna, R., Kalia, A., Menzies, T., Xiao, J., & Vukovic, M. (2022). Partitioning Cloud-based Microservices (via Deep Learning). *arXiv preprint arXiv:2109.14569*.

Baldassarre, M. T., Ernst, N., Hermann, B., Menzies, T., & **Yedida, R.** (2021). (Re)use of Research Results (is Rampant). *arXiv preprint arXiv:2108.06821*

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

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*

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.*

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*

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).*

Yedida, R., Yang, X., & Menzies, T. (2021). Old but Gold: Reconsidering the value of feedforward learners for software analytics. *arXiv preprint arXiv:2101.06319*.

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*.

Yedida, R., Michael-Beasly, J., Korn, D., Abrar, S. M., Melo-Filho, C., Muratov, E., Graedon, J., Graedon, T., Chirkova, R., & Tropsha, A. (2020). Text Mining of the People's Pharmacy Radio Show Transcripts Can Identify Novel Drug Repurposing Hypotheses. *arXiv preprint arXiv:2011.07959*.

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

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*.

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.

Honors

2022, Google Cloud Research Innovator

Relevant Projects

RateMyProgram.org Apr 2022 – Present
React, MongoDB, Sass, Azure *GitHub :: Website*

Website to rate and view ratings of graduate school programs.

Reddit Timer Apr. 2021 – Present
React, Styled Components, Sass *GitHub*

Website to help marketing teams time posts on Reddit for maximum attention.

SendToFuture Apr. 2021 – May 2021
iOS, Swift *GitHub*

iOS app to "snooze" links for a few hours.

Google/Facebook Data Mining Feb. 2021 – May 2021
Python, Keras *GitHub*

Data science project to use Google Takeout and Facebook 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 – June 2021
MongoDB, Node.js, React *GitHub*

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

NearConnect Nov. 2020 – Mar. 2021
iOS, Swift *GitHub :: App Store*

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

RAISE Aug. 2020 – Present
Python, Keras *GitHub :: PyPI*

Sole developer for a PEP8/PEP257-compliant, ML Python package used by our research lab and others for replicable results. Downloaded 12k times.

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 and built a 2-layer predictive LSTM model, achieving 42% top-5 accuracy.

JournalBear Jun. 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, React, Node.js *GitHub*

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

Video Sharing Website Oct. 2017 – Dec. 2017
MySQL, Express, 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 30,000 downloads over multiple sites.

Video Indexer Jun. 2017 – Sep. 2017
C++, Qt, CMUSphinx *GitHub*

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

Web development projects Jan. 2017 – Nov. 2017
MongoDB, Express, React, Node.js, D3, Sass *GitHub*

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, JavaScript, Java, C++

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

Databases: SQL, MongoDB, DynamoDB

Talks

Complexity Classes and NP-Completeness, presented at PES University, Bangalore, 2017.

How to design a Flappy Bird game, presented at PES University, Bangalore, 2018.

Machine Learning, presented at PES University, Bangalore, 2018.

An Introduction to Data Analysis, presented at PES University, Bangalore, 2018.

Service to Profession

Student Volunteer, Automated Software Engineering (ASE) '21

Reviewer, Empirical Software Engineering (EMSE)

PC Member, International Conference on Software Maintenance and Evolution (ICSME) '21 Artifact Evaluation Track

Reviewer, IEEE Symposium Series on Computational Intelligence (SSCI) 2020

PC Member, International Conference on Modeling, Machine Learning, and Astronomy (MMLA), 2019