Rahul Yedida, Software Developer
Website :: GitHub :: LinkedIn :: Google Scholar
r.yedida@pm.me
(919)-636-8327

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: 3.2/4.0 — *Aug. 2015 – May 2019*

Employment

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

- Better, faster deep learning for software engineering
- V&V for AI systems
- Reuse in software engineering
- Automated microservice partitioning

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

Baldassarre, M. T., Ernst, N., Hermann, B., Menzies, T., & **Yedida, R.** (2021). Crowdsourcing the State of the Art(ifacts). *arXiv preprint arXiv:2108.06821*

Yedida, R., & Menzies, T. (2021). Documenting Evidence of a Reuse of 'A Systematic Study of the Class Imbalance Problem in Convolutional Neural Networks'. In *Proceedings of the 29th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '21), August 23–28, 2021, Athens, Greece.*

Yedida, R., & Menzies, T. (2021). Documenting Evidence of a Reuse of 'On the Number of Linear Regions of Deep Neural Networks'. In *Proceedings of the 29th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '21), August 23-28, 2021, Athens, Greece.*

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). When SIMPLE is better than complex: A case study on deep learning for predicting Bugzilla issue close time. *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., Abrar, S. M., Melo-Filho, C., Muratov, E., Chirkova, R., & Tropsha, A. (2020). Text Mining to Identify and Extract Novel Disease Treatments From Unstructured Datasets. *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*.

Projects

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 Takeout Data Mining Feb. 2021 – May 2021
Python, Keras *GitHub*

Data science project to use Google Takeout data to suggest products to advertise to a user from Amazon best sellers using BERT and achieved 0.4 F-1 score.

Threaded Discussions Website Feb. 2021 – Present
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 4,700 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, C++, Swift, VB.NET

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

Databases: SQL, MongoDB

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

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

Technical Program Committee Member, International Conference on Modeling, Machine Learning, and Astronomy (MMLA), 2019