**Rahul Yedida**, ML Engineer
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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: 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

**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.

**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.

## 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)

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

**Technical Program Committee Member**, International Conference on Modeling, Machine Learning, and Astronomy, 2019