

## EDUCATION

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### North Carolina State University

Ph.D. Computer Science

Raleigh, NC

Aug 2019 - Jul 2024

- Advisor: Dr. Tim Menzies
- Dissertation: *Guidelines for the Application of Neural Technologies in Software Analytics (or: How to Do More with Less in SE)*

### PES University

B.E. Computer Science – Advisor: Dr. Snehanshu Saha

Bangalore, India

Aug 2015 - May 2019

## EMPLOYMENT

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### LexisNexis Legal & Professional

Senior Data Scientist I

Raleigh, NC

May 2024 - Present

- **Performance improvements:** Improved customer-facing product runtime by 24.8% and reduced peak memory usage duration by 21.3%.
- **Drafting improvements:** Helped improve complaint drafting results by 115% and motion drafting by 28.4% of usefulness.
- **Workflow improvement:** Led initiative to use Bayesian optimization for prompt tuning.
- **Innovation:** Developed fast passage filtering approach based on contrastive loss and tabu search.
- **Technology:** Python, Litestar, React, TypeScript, Tailwind

### North Carolina State University

PhD Student

Raleigh, NC

Aug 2019 - Jul 2024

- **State-of-the-art hyper-parameter optimization:** Proposed a novel hyper-parameter optimization method that outperforms prior SOTA and is 36.4% 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) compared to prior SOTA.
- **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)

### Amazon

Software Dev Engineer Intern

New York, NY / Bellevue, WA

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, DynamoDB, Java Spring

## RECENT PUBLICATIONS

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See full list on [Google Scholar](#).

1. **Yedida, R.**, & Menzies, T. (2025). Is Hyper-Parameter Optimization Different for Software Analytics? *IEEE Transactions on Software Engineering*, doi: 10.1109/TSE.2025.3550103.
2. 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.
3. **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*, 49(4), 2856-2872.

4. **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*, 219, 119673.
5. **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)*.
6. **Yedida, R.**, & Menzies, T. (2021). On the Value of Oversampling for Deep Learning in Software Defect Prediction. *IEEE Transactions on Software Engineering*, 48(8), 3103-3116.
7. 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*, 48(8), 2939-2954.
8. 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.
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. **Yedida, R.**, & Saha, S. (2021). Beginning with Machine Learning: A Comprehensive Primer. *The European Physical Journal Special Topics*, 230(10), 2363-2444.
11. 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.
12. **Yedida, R.**, Saha, S., & Prashanth, T. (2020). LipschitzLR: Using theoretically computed adaptive learning rates for fast convergence. *Applied Intelligence*, 1-19.
13. 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).
14. 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.

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## FUNDING

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

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## SERVICE TO PROFESSION

**Guest Editor**, IEEE Software SI: The Impact of AI on Productivity and Code 2025; ASEj SI: Replications and Negative Results (RENE) 2025; EMSE SI: Replications and Negative Results (RENE) 2025

**Co-Chair**, ASE 2025 Workshop on Intelligent Software Engineering; ASE 2024 Workshop on Replications and Negative Results (RENE)

**PC Member**, ICSE 2026; AI Foundation Models and Software Engineering (FORGE) 2024; ICSME Artifact Evaluation Track, 2021-2023; ASE Artifact Evaluation Track, 2022; International Conference on Modeling, Machine Learning, and Astronomy (MMLA), 2019

**Reviewer**, EMSE 2021, 2025; ASEj 2025; AAAI 2025; NeurIPS 2023; ICML 2024-2025; ICLR 2024-2025; NCAA 2023-2025; TMLR 2024; Neural Processing Letters 2023-2024; Artificial Intelligence Review 2023; Journal of Big Data, 2023; ASE 2023; IEEE SSCI 2020

## HONORS AND AWARDS

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**Mar 2025 - Present** - Google Developer Expert (2025) - ML and GCP

**Oct 2022 - Mar 2025** - Google Cloud Champion Innovator - Cloud AI/ML

**Feb 2022** - Google Cloud Research Innovator

## RELEVANT PROJECTS

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### **RAG Agent for Zotero**

*Rust, SQLite*

Oct 2024 - Present

[GitHub](#)

WIP: Building a PDF parser and a RAG agent for academic papers by linking to the user's Zotero library.

### **RAISE**

*Python, Keras*

Aug 2020 - Present

[GitHub](#) :: [PyPI](#)

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

Downloaded 49k times.

### **Programmable Resumes**

*Python*

Aug 2023 - Mar 2025

[GitHub](#)

Developed a specification and implementation for modular, customizable resumes with support for two popular LaTeX templates. Wrote this resume using this tool.

### **pysh**

*C++, TMLanguage*

May 2021 - Dec 2024

[GitHub](#)

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

### **Threaded Discussions Website**

*MongoDB, Node.js, React*

Feb 2021 - Jun 2021

[GitHub](#)

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

### **Google/Meta Data Mining**

*Python, Keras*

Feb 2021 - May 2021

[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.

### **NearConnect**

*iOS, SwiftUI*

Nov 2020 - Mar 2021

[GitHub](#) :: [App Store](#)

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

### **Novel Drug Repurposing Hypotheses**

*Python, PyTorch*

Oct 2019 - Feb 2020

[GitHub](#)

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

### **Personalized Chatbot**

*Python, Keras*

May 2019 - May 2019

[GitHub](#)

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

### **Intelligent Tutoring System**

*Python*

Sep 2018 - May 2019

[GitHub](#)

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

### **JournalBear**

*JavaScript, Electron*

Jan 2017 - Feb 2019

[GitHub](#) :: [Softpedia](#)

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

### **Astronomy Image Restoration**

*Python, Keras*

Aug 2018 - Nov 2018

[GitHub](#)

Developed a machine learning approach to restore astronomical images affected by PSF anisotropy and smearing in crowded-field photometry, improving data retention and accuracy in differential imaging analysis of long-baseline optical time series.

**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.

**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.

**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.

**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.

**SKILLS**

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**Languages:** Python, TypeScript, Java, C++, Gleam**Frameworks:** Flask, Keras, PyTorch, Node.js, React**Databases:** MySQL, MongoDB, DynamoDB**Cloud:** Google Compute Engine, S3, Google Cloud Storage, EC2