Ronilo J. Ragodos

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EDUCATION

Bsc. in Computer Science and Applied Math (double major), August 2013 - May 2017
Texas A&M University, College Station, TX
MS in Mathematics, August 2017 - May 2019
University of Iowa, Iowa City, IA
PhD in Business Analytics, Current
University of Iowa, Iowa City, IA

INDUSTRY EXPERIENCE

Software Developer at Verif.AI Summer 2020

TEACHING EXPERIENCE

Undergraduate grader for Linear Algebra, Differential Equations, and Engineering Calculus 1 at Texas A&M, August 2015 - August 2016
TA for MATH 1440 Math for the Biological Sciences at Univ. of Iowa Fall 2017 - Spring 2019
TA for MATH 1460 Calculus for the Biological Sciences at Univ. of Iowa Fall 2019
TA for MSCI 2800 Business Analytics at Univ. of Iowa Spring 2019
TA for BAIS 3000 Operations Management at Univ. of Iowa Spring 2019 - Spring 2022
TA for BAIS 3500 Data Mining at Univ. of Iowa Fall 2022 - Current

RESEARCH EXPERIENCE

Cornell SPUR (Summer Program for Undergraduate Research) Summer 2016

- Worked with two other students on advisor Dr. Robert Strichartz's project *Percolation Clusters on Products of Fractal Graphs.*
- Designed and performed experiments on fractal graph approximations using Python and its networkx, graph_tool, igraph, and SciPy libraries.
- Created project website: *https://www.math.cornell.edu/∼roniloragodos57/*

Interpretable Machine Learning, University of Iowa Fall 2017 - Current

- Designed and implemented rule based classification algorithm in Python using convex optimization for INZONE.AI.
- Designed and implemented a new interpretable regressor, DisRL, which achieves better performance than state-of-the-art interpretable classifiers.
- Designed and implemented a new interpretable reinforcement learning agent explainer, ProtoX, the first model to explain agent behaviors by relating to learned prototypical scenarios.
- Currently working on an interpretable human behavior explainer, ProtoGAIL, which explains taxi driver decisions by relating to learned prototypical scenarios.
- Currently working on a paper that will demonstrate weaknesses of popular post-hoc explainers like LIME and SHAP and outline ways business researchers may mitigate those weaknesses when using post-hoc explainers to draw managerial insights.
- Invited by Dr. Chaofan Chen of the University of Maine to collaborate on a project on designing interpretable robot arm controllers that are trained using demonstration data. Project begins January 2023.

Image classification for dental anomaly identification, University of Iowa Fall 2017 - Summer 2022

- Used deep transfer learning to classify dental anomalies in children with orofacial clefting, using intraoral photos from a large clinical study of 4085 patients from seven countries including the US, Hungary, and the Philippines.
- Accomplished implementation using Python, the PyTorch library; ran code on computing cluster.

Mall Graph Analytics, University of Iowa — Summer 2022 - Current

- Currently working on a project to represent mall floor plans as graphs, then use graph neural networks to extract information about them.

WORKING PAPERS

- **Ragodos, R.**, Wang, T., Hu, Y., and Lu, F., "On the Use of Post-Hoc Explainers for Business Problems" targeted at *Management Science*
- **Ragodos, R.**, Zhou, X., and Wang, T., "ProtoGAIL: Interpretable Policy Learning via Prototyping for Human Decision Understanding" targeted at *SIGKDD Conference on Knowledge Discovery and Data Mining, 2023*

PUBLICATIONS

- **Ragodos, R.**, Lin, Q., Zhou, X., and Wang, T., "ProtoX: Explaining a Reinforcement Learning Agent via Prototyping" at NeurIPS - *Conference on Neural Information Processing Systems*, 2022
- **Ragodos, R.**, Wang T."Disjunctive Rule Lists" in IJOC - *INFORMS Journal of Computing*, 2022
- **Ragodos, R.**, Wang, T., Wehby G., Weinberg S.M., Dawson D.V., Marazita M.L., Moreno Uribe L.M., and Howe, B.J., "Dental anomaly detection using intraoral photos via deep learning" in *Nature Scientific Reports*, 2022

PRESENTATIONS

- Presented "ProtoX: Explaining a Reinforcement Learning Agent via Prototyping" at a *NeurIPS 2022* poster session.
- Gave an oral presentation on "ProtoX: Explaining a Reinforcement Learning Agent via Prototyping" at the 2022 INFORMS annual meeting.
- Presented poster based on dental anomaly research at the International Association for Dental Research 2019 general session in Vancouver.
- Gave a short oral presentation on dental anomaly research during the 2019 American Association for Dental Research conference held at the University of Iowa.

AWARDS

- University of Iowa AMCS Summer Merit Fellowship 2018
- University of Iowa AMCS Summer Merit Fellowship 2019
- University of Iowa Business Analytics Summer Merit Fellowship 2021
- University of Iowa Business Analytics Summer Merit Fellowship 2022

TECHNOLOGY SKILLS

Programming/Markup Language Experience: C, C#, C++, Python, R, LaTeX, HTML (most comfortable with Python and C-based languages)
Software: Microsoft Office, Git, VirtualBox.
Operating Systems: Windows, Debian and Arch based GNU/Linux