




ETHAN JOSEPH

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EXPERIENCE

Project Lead @ Rensselaer Center for Open Source Jan 2020 — Present

- Founder and project manager for **smartrider**: the all-in-one RPI transportation app for iOS, Android, and web built with Flutter.
- Led team of over 15 developers from zero mobile dev experience to working beta in 4 semesters.
- Currently leading team to launch by Spring 2022.

RL and NLP Research @ Rensselaer Polytechnic Institute Jan 2020 — May 2022

- Working with Dr. Mei Si to research Natural Language Processing and Reinforcement Learning.
- Authored paper on tabular data-to-text generation using transformer neural networks and a novel dataset for common sense inference.
- Currently developing a multi-task reinforcement learning agent architecture with subgoal modeling in partnership with Substrate AI.

Data Analytics @ Rensselaer Polytechnic Institute & NASA Goddard Jan 2021 — August 2021

- Developed NLP web-scraper to extract vector-borne disease data from ProMED-mail in collaboration with NASA researchers.
- Analyzed data using machine learning methods, authored paper published in 2021 IEEE Big Data.

Systems Research, Developer @ Carnegie Mellon SEI Jun 2020 — Jun 2021

- Worked with Dr. Amit Vasudevan to develop the next-gen uberSpark toolkit for compositional verification of commodity system software.
- Developed hardware model abstraction and converted open-source firmwares (TF-A/OpenSBI) to use uberSpark.

Developer @ Skywind & Skyblivion Mod Project Jun 2020 — Present

- Joined team of over 100 developers trying to port Bethesda's video game Morrowind and Oblivion into the Skyrim Engine.
- In charge of spell crafting system, involves C++ reverse-engineering and Flash/Actionscript UI development.

PUBLICATIONS

Joseph, E., Munasinghe, T., Tubbs, H., Bishnoi, B., & Anyamba, A. (2021, Dec). Scraping Unstructured Data to Explore the Relationship between Rainfall Anomalies and Vector-Borne Disease Outbreaks. In 2021 IEEE International Conference on Big Data (Big Data) (pp. 4156-4164). IEEE.

Joseph, E., Lioanag, J., & Si, M. (2021). Improving Data-to-Text Generation via Preserving High-Frequency Phrases and Fact-Checking. IJCoL. Italian Journal of Computational Linguistics, 7(7-1, 2), 223-244.

Yao, B., Joseph, E., Lioanag, J., & Si, M. (in press). A Corpus for Commonsense Inference in Story Cloze Test. In Proceedings of The 13th Language Resources and Evaluation Conference.

PROJECTS

fakeBlock, Fake News Blocking Browser Extension 2021

Developed an "adblocker" for fake news using typescript and tensorflow.js as part of an agile development team. Uses a transformer neural network trained to classify millions of real and misleading/fake news articles, with some architecture modifications for explainability.

Alphastone, Hearthstone Reinforcement Learning AI 2018

Adapted DeepMind's AlphaZero algorithm to train an AI to play the card game Hearthstone from no prior knowledge of the game.

EDUCATION

Cornell University Aug 2022 - Expected: May 2023

Masters of Engineering in Computer Science

Rensselaer Polytechnic Institute Aug 2019 - Dec 2021

Bachelors of Science in Computer Science

GPA: 3.90 / 4.00 *summa cum laude*

SKILLS

Languages:

Python, C++, Rust, TypeScript, Dart

Tools:

Git, Google Cloud, AWS, Docker

Libraries and Frameworks:

PyTorch, Tensorflow, Pandas, NumPy