**Pranav Rupireddy**

[rupir001@uchicago.edu](mailto:rupir001@uchicago.edu) | https://github.com/prupireddy

**EDUCATION**

**University of Chicago**

*M.S. Computer Science, GPA – 3.78/4.00 January 2023 – March 2024* *B.S. Computational and Applied Mathematics, B.A. Economics, GPA – 3.73/4.00 September 2020 – March 2024*

**Parnassus Preparatory School** *August 2011- June 2019*

*Classical High School Diploma, Summa Cum Laude*

Activities: Captained Science, Math (Individual Peak: 16th MN), Economics (MVP of 1st State/16th US Team), NHS

Honors: Two-Time All-State Math Team, MN STEM Scholar of Distinction (MN Department of Education)

**RELEVANT EXPERIENCE**

**Milliman: Minneapolis Health and Life** *March 2024 – Present*

*Quantitative/Machine Learning Research Intern*

* Working on generative AI and quantitative finance projects

**NASA Jet Propulsion Laboratory** *June 2022 – August 2022*

*Machine Learning Research Intern*

* Engineered machine learning pipeline to gather & cluster False Positives of a new frost detection method
* Published (first-author) and presented (in front of 200+ scientists) work at the 6th Planetary Data Workshop

**Maroon Capital** *October 2021 – June 2022*

*Member*

* Attended regular financial markets lectures
* Co-developed market volatility-adjusted momentum equity trading strategy (Python)

**Milliman: Minneapolis Health and Life** *June 2021 – September 2021*

*Senior Data Science Intern*

* Developed and ran nearly 76 pipelines (Python & R) outputting per-race AUCs of various racial imputing algorithms under various conditions; the models are still used in Milliman’s current work
* Leveraged 12 models: 4 Bayesian models (nested BIFSG, BISG, surname-only, geocode-only), 7 uncalibrated NLP models (ethnicolr), and 1 calibrated NLP model

**Milliman: Minneapolis Health and Life** *June 2020 – September 2020*

*Data Science Intern, R&D*

* Rebuilt previous Azure + R-based distributed machine learning pipelines in new HITRUST-certified Databricks setup; the work became the barebones of Milliman’s current pipeline
* Pipeline — 1) AWS S3; 2) Spark (SQL); 3) Python GBMs hyperparameter-optimized over AWS clusters
* Developed a model, by integrating Bayesian Optimization, GPU computing, Gradient-Based Sampling & Single-Fold Holdout, that ran 10x faster than the company's current risk adjuster model

**INDEPENDENT PROJECTS**

**Algorithmic Sports Betting** *December 2023 – April 2024*

* Developed a model to predict player points & used this model to bet on player point over/under props
* 90% success rate (~37% edge) up until highly volatile end of regular season

**Genetic Programming-Reinforcement Learning Options Trading Algorithm** *October 2023 – December 2023*

* Developed a genetic programming-reinforcement learning hybrid model (in Python) known as GNP-SARSA to trade S&P 500 ETF options (2.38% better PnL than Buy-and-Hold on the underlying)

**Yelp Full-Stack Favorites App** *July 2023 – August 2023*

* Designed a full-stack Android application integrated with a RESTful Yelp API, a MongoDB database deployed to AWS Lightsail using Quarkus + Docker, and an AWS Lambda SES emailer

**Unemployment Rate Prediction** *January 2023*

* Tested pairings of several different datasets (combinations of labor force flows, unemployment rate, and GDP growth) and models (LSTM, AR(6), VAR) to predict monthly US unemployment rate (Python)

**RELEVANT SKILLS**

Top: Machine/Deep Learning (Tensorflow/Keras, XGBoost, PyTorch, Hyperopt, MLFlow etc.), Python, Math

Others: R, C/C++, SQL, Git, MATLAB, Linux, AWS, Docker/MongoDB/Quarkus/Kotlin/AndroidStudio, Flask