

AKSHATH RAGHAV RAVIKIRAN

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Education

Purdue University

West Lafayette, IN || August 2022 – May 2026

Bachelor of Science in Computer Engineering

GPA: 3.97

Activities: Google Tensorflow Model Garden, ML@Purdue, Purdue Aerial Robotics Team, BoilerMake, IEEE Honors Society

Relevant Coursework: Advanced C Programming, Electrical Engineering Fundamentals, Python for Data Science

Multivariable Calculus, Differential Equations and Linear Algebra

Publications

Time-Driven Fire Risk Forecasting: Leveraging Historical Trends for Enhanced Seasonal Modeling

Report on modelling systems that achieve 90%+ accuracies across pertinent metrics; validations against government forecasts.

Experience

Ambee (Climate Intelligence)

March 2023 – July 2023

Data Science Intern

Bangalore, India

- Created a global forest-fire forecasting system (F3) integrated into Ambee's proprietary API dashboard, enabling comprehensive risk assessment. Developed modularized components implemented within an end-to-end AWS lifecycle ensuring tri-monthly forecast generation, complimented by robust ETL pipelines.
- Co-authored a research paper outlining unique strategies targeting historical Fire Weather Index, enhancing a **Boosted Multi-Target RF Regressor's** performance to match/surpass weather-ensemble-based forecasts in geo-location risk classification. Highlighted implications of different target encoding methods on models' decision-making mechanisms.

Lightning Wildfire Lab (Prof. Wang, Purdue X NASA)

December 2022 – April 2023

Data Science Lead

West Lafayette, IN

- Supervised codebase development for short-term wildfire forecasting; Responsible for bundling netCDF data on the basis of temporal, spatial and spatio-temporal features to package into **LSTM**, **CNN** and **ConvLSTM** models.
- Automated API requests for large scale fire data collection from USGS and Copernicus; Developed scripts using **Xarray**, **Geopandas** and **netCDF4** to process LandSAT and GeoTIFF data from NASA/NOAA satellites.

Webee Technologies

August 2022 – December 2022

Undergraduate Data Science Researcher

West Lafayette, IN

- Collaborated with Webee Technologies through the Data Mine to enable their IIoT technology toolset to accurately geolocate assets in indoor environments. Summarized research papers towards the same end.
- Worked on implementing **Kalman Filtering** for multi-data sensor fusion to identify proximity of assets to beacons. Tested developed **trilateration** algorithms using custom Bluetooth Low Energy gateways and beacons.

Projects

YourCollege CLI (BoilerMake X Hackathon)

Scikit-learn, Pandas, Numpy, Click, Rich

- Innovative college recommendation system using an **Unsupervised Weighted K-Means** model to provide college recommendations based on qualitative, in contrast to commonplace quantitative, factors.
- Developed **Rich CLI interface** to enable preference weighting of holistic features to personalize college choices. Groups together colleges on the basis of proximity to Euclidean cluster centroids.

Cubot/Cubord (Open Source SpeedCubing Library)

PostgreSQL, Maven, IntelliJ, Git, AWS Hosting, Blender

- Published **SpeedCubing Java Library** on Maven. Created efficient multi-dimensional structures for split-second solves, optimized algorithm manipulation and designed graphic support. Extended use-case using **Discord's API**.
- Enables cube-set manipulation on the terminal; procedurally structures solutions using the CFOP method; automatically identifies issues with cube-state interactions (for example, impossible cube states, algorithm errors).

Honors

Eli Shay Electrical Engineering Scholarship

Dean's List and Semester's Honors – Fall 22, Spring 23

Technical Skills

Languages: Python, C, Java, JavaScript, PostgreSQL, MATLAB, R

Frameworks: Tensorflow, Xarray, Geopandas, GDAL, Pytorch, NumPy, Pandas, Rasterio, Django, Node.js

Tools: Google Cloud Console (Compute), AWS (S3, Sagemaker)