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*

Activites: IEEE Honor Society, Purdue BIDC (IoT Research), ML@Purdue (Operations), Purdue Aerial Robotics Team

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

Google ML X Purdue Duality Lab (Prof. James Davis) **August 2023 – Present**

TensorFlow Model Developer *West Lafayette, IN*

- Re-engineering **MaskFormer/Mask2Former** image segmentation models for Google's **TensorFlow Model Garden**.

Ambee (Climate Intelligence) **March 2023 – July 2023**

Data Science Intern *Bangalore, India*

- Created a global forest-fire forecasting system (F3) that was 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 risk classification.

Lightning Wildfire Lab (Prof. Yuan 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 Student Researcher *West Lafayette, IN*

- Collaborated with Webee Technologies through the Data Mine (Purdue) 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 floor-wide beacons. Tested the 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

Technical Skills

Languages: Python, C, Java, JavaScript, PostgreSQL, MATLAB, R
Frameworks: TensorFlow, PyTorch, Xarray, GeoPandas, GDAL, NumPy, Pandas, Rasterio, Django, Node.js
Tools: Docker, Google Cloud Platform (Compute), AWS (S3)