

John Waugh

Chapel Hill, NC | johnmwaugh21@gmail.com | (919) 928 6815 | [LinkedIn](#) | [Github](#)

EDUCATION

Appalachian State University

B.S. Computer Science | GPA: 3.6/4.0

M.S. Data Science | GPA: 3.6/4.0

Boone, NC

Aug. 2022 - Present

Jan. 2025 - Present

WORK EXPERIENCE

Team Sunergy, [Appalachian State University Competitive Solar Vehicle Team](#)

Boone, NC

Embedded Systems Engineer

June 2023 - Present

- Debug and improve telemetry systems used in the car
- Collaborate with team members to develop new systems quantifying and analyzing data received from the car
- Utilized Agile principles during development of a digital dashboard

Race Operations Lead

Jan. 2024 - Present

- Build corporate connections and maintain sponsor relationships for the team
- Brainstorm ideas for and plan new fundraising/outreach efforts
- Help develop and organize schedules/agenda for weekly team meetings

PROJECTS AND ACTIVITIES

[Personal Portfolio](#)

- Developed a portfolio website using React to showcasing my background, skills, and project, updated regularly

[Live Telemetry Data Web Application](#)

- Developed a web application which displays data signals from a vehicle into a user friendly readable format
- Features include a score calculator for solar vehicle race applications, live telemetry data from various sensors throughout the vehicle, a weather widget based on geolocation, and a live fault/error code display
- Data is recorded in real time to a CSV file for further analysis
- Languages and frameworks used include React

[Runoff Forecasting Model](#)

- Developed a deep learning post-processing pipeline to improve National Water Model (NWM) runoff forecasts by training and comparing RNN, LSTM, and Transformer models to predict and correct forecast errors
- Processed and aligned over 2 million hourly time-series data points from NWM and USGS sources, training six distinct, station-specific models in Tensorflow/Keras
- Quantified model performance using four hydrological metrics (NSE, RMSE, etc.), proving that the LSTM and Transformer architectures substantially improved forecast accuracy by correcting the NWM's underestimation of peak flow events
- Languages and frameworks used include Python, TensorFlow, Keras, Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn, Jupyter Notebooks

SKILLS & INTERESTS

Computer: C, Python, Java, SQL, Haskell, R, Full-Stack Web Development (including HTML, CSS, JS, React)

Interests: AI/ML Engineering, Data Science, Full-Stack Web Development, Embedded Systems/Telemetry Design, UI Engineering/Design

Hobbies: Skateboarding, Snowboarding, Personal Finance and Investing, Soccer, Motorsport