Oliver Perrin

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Education

Appalachian State University Boone, NC
B.S. Computer Science, Minor in Mathematics, Data Science Certificate *Expected May 2026*

- Relevant Courses: Applied Machine Learning, Data Structures & Algorithms, Database, Numerical Methods
- Coursework Projects: Mathematical language interpreter (Haskell), pipelined CPU simulator (C/C++), 2D game engine (Java)
- Team Captain, University Esports Club

Experience

Data & Systems Engineering Intern June 2023 – August 2024
Triaxis Power Consulting LLC *Charlotte, NC*

- Deployed IoT monitoring system with Raspberry Pi 4, thermocouples, and potentiometers to track pipe temperature and thermal expansion in fossil fuel power plants for predictive maintenance
- Built Python pipeline to process and visualize sensor telemetry with automated cloud sync and remote access via PiTunnel for continuous monitoring across multiple plant sites
- Engineered NAS-to-SharePoint integration with automated folder sync, reducing manual transfers by 80% and centralizing 500GB+ of engineering data

Data Science Participant May 2025 – July 2025
The Global Career Accelerator *Remote*

- Analyzed production datasets from Intel, Lyft, OpenAI, Spotify, and The Recording Academy across international teams of 6+, delivering data-driven business insights
- Applied SQL for complex queries on multi-million row datasets and Python (Pandas, Plotly) for statistical analysis and interactive visualizations

Projects

LexiMind: Multi-Task Learning for Literary & Academic Text | *PyTorch, Transformers* Jan 2026

- Designed and evaluated a multi-task transformer system (272M params) jointly trained for summarization, topic classification, and emotion detection, analyzing positive and negative transfer in literary and academic text.
- Ran controlled ablation studies (single-task vs. multi-task, random vs. pretrained initialization, task-loss weighting), demonstrating +3.2% accuracy gains for low-resource topic classification and identifying domain-mismatch–driven negative transfer in emotion modeling.
- Built an end-to-end training and evaluation pipeline using PyTorch and Hugging Face with ROUGE, BERTScore, and F1 metrics, early stopping, and mixed-precision GPU training; showed pretrained initialization accounted for 85% of final performance.

F1 Race Outcome Predictor | *Python, Scikit-learn, Streamlit, Pandas, Seaborn* Nov 2025

- Built end-to-end ML pipeline to predict Formula 1 race outcomes using FastF1, processing qualifying and race data across multiple seasons with automated data collection and feature engineering
- Trained Random Forest regression (MAE 1.78 grid positions) and Logistic Regression classifiers (93.8% accuracy) to predict finishing positions and qualifying performance with scenario planning for upcoming races
- Deployed interactive Streamlit dashboard with model diagnostics, historical analysis, and future race simulations

PlayAxis: Full-Stack Events & Sports Platform | *React.js, FastAPI, PostgreSQL, Docker* Sep 2025

- Built platform aggregating real-time schedules, scores, and data for events and sports by integrating 3+ external APIs with FastAPI backend (Pydantic validation) and PostgreSQL database
- Containerized with Docker; automated CI/CD via Netlify (frontend) and Koyeb (backend), reducing deployment time by 60%.

Technical Skills

Languages: Python, C/C++, Java, SQL, JavaScript, Haskell, Assembly, Maple
ML & Data: PyTorch, Transformers, TensorFlow, Scikit-learn, Pandas, NumPy, Matplotlib, Plotly
Systems & Web: FastAPI, React.js, PostgreSQL, Node.js, Docker, Git, Linux, REST APIs, CI/CD, TailwindCSS