

# JASON CHARWIN

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## EDUCATION

### University of North Carolina - Chapel Hill

Bachelor's, Data Science

August 2024 - June 2027

GPA: 3.7

## PROFESSIONAL EXPERIENCE

### UNC School of Data Science and Society

Undergraduate Researcher

Chapel Hill, NC, USA

December 2025 - Present

- Build Python pipelines for preprocessing/QC and exploratory analysis on high-dimensional genomics and epigenomics datasets to support downstream ML experiments.
- Implement and benchmark literature-driven approaches (deep tensor factorization; network-based gene/protein modeling) with reproducible notebooks/scripts and version-controlled workflows.

### GBCS Group

Data Science Intern

Remote

August 2025 - Present

- Ingest, clean, and structure multi-platform SEO + engagement data in Python (pandas/NumPy); engineer features for forecasting, segmentation, and trend detection.
- Develop regression/clustering analyses and deliver insights through a KPI dashboard and reporting pipeline used to prioritize content and improve conversion strategy.

### Hope Street Free Clinic

Data Analytics Intern

Charlotte, NC

December 2024 - August 2025

- Built demand forecasting and resource allocation optimization in Python (pandas/NumPy, scikit-learn) to target high-need neighborhoods and improve clinic planning.
- Shipped a full intake + scheduling system (Flask backend + SQLite + lightweight React UI), digitizing workflows and reducing administrative overhead by ~60%.

## PROJECTS & OUTSIDE EXPERIENCE

### The Search for a Second Earth

Developer

Chapel Hill, NC, USA

September 2025 - September 2025

- Built an interactive exoplanet explorer using NASA/ESA datasets by cleaning and merging 4,000+ records in Python and engineering habitability indicators.
- Shipped a high-performance Next.js app with virtualized tables, custom filters, and comparison views to support fast exploration of large datasets.
- [Link to project](#)

### Brain Bleeding Classification Model

Machine Learning Researcher

Chapel Hill, NC, USA

- Built a deep learning classification model to detect brain bleeding in CT/MRI scans using a ResNet50-based architecture
- Implemented preprocessing, augmentation, model training, evaluation, and a real-time prediction interface
- Delivered saved checkpoints, metrics, and a structured ML pipeline following reproducible research standards.
- [Link to project](#)

### F1 Corner Analysis

Developer and Data Analyst

Remote

June 2025 - Present

- Built a telemetry analytics platform using FastF1 to process braking, throttle, and tire signals, enabling corner-level driver comparisons.
- Applied time-series clustering and lap-delta regression to quantify performance differences across corners.
- Added an LLM-driven natural-language interface that converts user prompts into telemetry visualizations, deployed with Next.js and Python APIs.
- [Link to project](#)

### Advanced SQL Lineage & Column Extraction Engine

December 2025 - Present

- Built a Python static analysis tool that extracts fully-qualified table.column references from complex SQL using AST parsing and scope-aware alias resolution.
- Improved lineage correctness across nested queries, CTEs, subqueries, and correlated scopes by implementing robust alias tracking without leaking aliases.
- Supported 30+ real-world SQL edge cases (recursive CTEs, APPLY joins, window functions, PIVOT/UNPIVOT, TVFs) and multi-dialect parsing (T-SQL, Postgres, MySQL, Snowflake, BigQuery) via sqlglot with fallback strategies.
- Automated recursive file ingestion and preprocessing (strip comments, DDL, hints), exporting structured lineage outputs to CSV and Excel.
- [Link to project](#)

## SKILLS

**Skills:** Java, Python, Pandas, NumPy, matplotlib, Scikit-learn, Pytorch, R, iOS/Swift, TypeScript, Flask, Node.js, React.js, Next.js, Tailwind CSS, REST APIs, SQL, MongoDB, Git, CI/CD, GitHub Actions, AMP, Tailscale, Agile, SCRUM, SEO, Data Analysis, Web Development, Teaching, Mentoring, MATLAB, Excel/Numbers/Sheets, Genomics, Applied ML

**Languages:** Spanish, Tamil