

Christopher McKenzie

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Summary

Computer Science graduate and Mechanical Engineer pivoting to data science / ML. Build end-to-end prototypes: ingest and clean data, engineer features, train/evaluate baseline models, and ship lightweight demos. Comfortable explaining results with clear visuals and practical trade-offs.

Technical Skills

Languages: Python, Java, C++

Data & ML: pandas, NumPy, scikit-learn; model development, train/test, evaluation (ROC, confusion matrix)

Visualization: Matplotlib, Seaborn

Backend & Web: Django, REST patterns, HTML/CSS

Databases & Tools: SQLite, PostgreSQL, MySQL, Git, Docker (basics), PyTest, PyCharm/IntelliJ

Foundations: Data structures & algorithms, Big-O analysis

Projects

Tennis Match Prediction Model – Python, Django, scikit-learn, Matplotlib, pandas/NumPy

Repo: github.com/chalrees876/tennisPrediction • Visualizations: chalrees876.github.io/tennisPrediction/

- End-to-end app: Django models for players/tournaments/matches; pandas feature pipeline; logistic-regression baseline in scikit-learn.
- Reproducible training split with generated evaluation artifacts (ROC curve, confusion matrix, classification report).
- Published a static demo on GitHub Pages: exported model coefficients to JSON and implemented browser-side inference, plus a gallery of evaluation plots.
- Integrated predictions with match records to surface per-match win probabilities in the UI.

Optimized Package Delivery System – Python, Hash Tables, Algorithm Design

Repo: github.com/chalrees876/Truck-Delivery-Optimization

- Implemented a greedy nearest-neighbor routing heuristic over a graph of addresses.
- Built a custom hash table for fast package lookups/updates; analyzed average/worst-case behavior and collision handling.
- Represented the road network with adjacency lists and a precomputed distance matrix; documented complexity and trade-offs vs. exhaustive search.

Professional Experience

Mechanical Engineer II — SSOE, New York, NY | Feb 2022 – Present

- Design HVAC and piping systems for manufacturing facilities with an emphasis on energy efficiency and cost.
- Conduct system simulations and static-pressure calculations to validate performance against requirements.
- Coordinate cross-functionally (software/architectural teams) and present technical updates to clients.
- Translate client requirements into actionable engineering specifications and system designs.
- Produce clear technical documentation for internal teams and stakeholders.

Education

B.S., Computer Science — Western Governors University, Sept 2025
B.S., Mechanical Engineering — University of Delaware, May 2021