# HUNTER POWELL

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## EDUCATION

**California State University, Sacramento** - B.S. Computer Science (Expected December 2026) GPA: 3.5
Relevant Courses: Machine Learning, Parallel Computing, Data Structures, Algorithms, Networking

## TECHNICAL SKILLS

- **Languages**: Python, C++, CUDA, Java, JavaScript
- **Frameworks/Tools**: Django, OpenMP, CMake, Numpy, Pandas, scikit-learn, Git
- **Databases/Other**: MySQL, REST APIs, Stripe integration

## PROFESSIONAL EXPERIENCE

**Software Engineer — Lydia's Law Site** | Sacramento, CA 2025-2026

- Full-stack Django app built from scratch by an 8-person team over 8 months for a family law practice.
- Collaborated on the 5-app modular architecture and 3-tier role-based access control (Guest / Client / Admin), contributing to shared infrastructure including Stripe/Calendly webhook handling and Google OAuth authentication.
- Integrated CKEditor into a custom Django admin authoring interface, enabling the firm's non-technical staff to write and publish rich-text content across all public-facing pages without developer involvement.
- Migrated site content from hardcoded templates into a normalized MySQL schema, refactoring Django templates to render dynamically from the database.

## PROJECTS

**Genetic Algorithm** - C++, OpenMP, Python **github.com/hunterpowell/GeneticAlg**

- Simulated the "coverage problem" - given a robot with limited energy, evolve a set of movement rules that maximizes how much of an unknown grid it can explore before running out of power.
- Encoded each robot's behavior as 32 conditional rules (genes) mapping perceived neighbor states → movement direction; robots sense N/E/S/W cell states and fire the first matching rule each turn.
- Applied elitism, tournament selection, uniform crossover, and random mutation across 500-agent generations, causing robots to independently converge on a boustrophedon (row-sweep) pattern achieving >90% average map coverage.
- Parallelized evaluation and repopulation loops with OpenMP, achieving a 27x speedup (138s → 5s) for 500-agent, 500-generation simulations.

**Heart Disease Risk Classifier -** Python, Pandas, Numpy, scikit-learn **github.com/hunterpowell/HeartDisease**

- Built binary classifier on 320K CDC BRFSS survey records (~8.6% positive class) comparing multiple models including KNN, Logistic Regression, Random Forest, XGBoost, LightGBM, CatBoost, and MLP.
- Engineered clinically driven features (composite risk score, comorbidity) and selected top predictors via LightGBM SelectFromModel, fit only on training data to prevent leakage.
- Addressed class imbalance with LightGBM's "scale_pos_weight" rather than SMOTE to avoid pre-split data leakage; evaluated using stratified 5-fold cross-validation, ROC-AUC, F1, and MCC.

## WORK EXPERIENCE

**Barista** | Starbucks | 2018–2019

- Delivered fast, accurate service to 100+ customers daily while collaborating with a 5-person team to improve efficiency.

**Automotive Technician** | Havoline Xpress Lube | 2015–2017

- Performed diagnostics and maintenance on 60+ vehicles daily, following safety protocols and communicating clearly with clients.
- Acted as senior technician among peers for the final year, informally mentoring newer hires and serving as the go-to for complex diagnostics.