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Carter Tate

Education

Cornell University - Class of 2027

- B.S. Computer Science - College of Engineering
- GPA: 3.64
- **Relevant Coursework**: Machine Learning, Operating Systems, Computer Systems, AI Agents & Rationality, Natural Language Processing, Object Oriented Programming & Data Structures, Functional Programming, Discrete Structures, Linear Algebra

Technical Skills

- Skills: Java, SQL, NoSQL, AWS, GitHub, Docker, Kubernetes, Unix/Linux, C, C++, Python, OCaml, Assembly, Version Control, Parallel Programming, Agile Practices, JavaScript, ReactJS, Sci-kit, TensorFlow, REST APIs, Pytorch, Pandas, NumPy, CI/CD, Unity, Swing, Excel, SHAP

Professional Experience

International Game Technology - Core Studios Technical Intern; June 2025 – August 2025

- Developed and trained Sci-kit DNN, XGBoost, and Random Forest models to predict slot machine session dynamics, focusing on behavioral modeling & extensive custom feature engineering for high-dimensional data, analyzing SHAP values to identify drivers of longer sessions and increasing bets, and producing confusion matrices to evaluate predictive accuracy, informing strategies for real-time game math adjustments for a leader in the gaming industry with $2.5 Billion annual revenue
- Built automation scripts and testing frameworks inside Unity to reduce manual debugging time

Nugget Casinos – Data Analyst; June 2025 - August 2025

- Built an end-to-end automation pipeline in Python to clean, feature-engineer, and model casino slot-machine meter and financial transaction data, training Random Forest, LightGBM, and elastic-net models to predict "coin-in" performance
- Created greedy-swap and simulated annealing algorithms to automate machine layout optimization, improving operational efficiency and customer segmentation
- Delivered data-driven financial insights that helped leadership understand customer tier behavior and dynamic revenue opportunities

Projects

Huffman Compression Program

- Built a Huffman file compression system in C by implementing a priority stack and queue, building and traversing a Huffman tree, outputting data in precise format and encoding characters into variable length bit patterns based on frequency to achieve efficient lossless compression

Intelligent Image Segmentation Tool

- Created a Java-based intelligent scissors image editor application, integrating Swing UI, pixel-graph modeling, and Dijkstra's algorithm to provide a real-time selection tool with visual progress indicators for image editing

Optimized Matrix Multiplication for Performance

- Implemented and benchmarked cache-aware matrix multiplication algorithms in C, focusing on spatial locality, access stride, memory layout, loop tiling, and instruction-level optimization
- Analyzed execution time across implementations and quantified performance improvements using profiling tools

Extracurricular Activities

Cornell University Wrestler; 2022 - Present

- Demonstrated resilience, teamwork, and rapid learning under pressure - balancing 20+ hours/week training with a full engineering course load
- Team 2nd Place NCAA National Tournament 2024, Team 3rd Place NCAA National Tournament 2023, Team EIWA/Ivy League Champions 2023-2025,
- Improved teamwork, discipline, hard work, and perseverance while competing as a NCAA Division I Wrestler

Big Red Leaders 2 Leaders Program; 2024 - Present

- Selected by wrestling coaches for a leadership program led by a sports psychologist, applying leadership and communication principles to motivate teammates, resolve conflicts, and improve team performance