Duncan Craine

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EDUCATION

CONNECTICUT COLLEGE — New London, Connecticut
Double Major: Computer Science – Statistics & Data Science ***GPA: 3.7*** 05/26

- **Relevant Coursework:** Machine Learning/Data Mining · Generative Data Modeling · Advanced Regression Techniques Data Structures · Intro to Data Science · Web Technologies · Linear Algebra · Statistical Computing with R
- **Honors/Awards:** ICSA Academic All-American Sailing Team · 2x All-NESCAC All-Academic Team Sophomore Computer Science Award · Best Video Game (Entertainment Software Design)

YALE UNIVERSITY ***GPA: 3.7*** New Haven, Connecticut
Algorithms – Summer Session 07/24

Fairfield UNIVERSITY ***GPA: 4.0*** Fairfield, Connecticut
Database Systems – Summer Session 06/24

SKILLS

Languages:	Python, SQL, R, C#, Java, C, C++, C#, JavaScript
Python Packages:	Scikit-Learn, Keras, PyTorch, NumPy, PANDAS, Matplotlib, Plotly, Seaborn, more
Other:	Power BI, Docker, NodeJS, REACT, Linux, Git, Microsoft Office, UE5, Unity, Jupyter

RESEARCH EXPERIENCE

NATIONAL INSTITUTE for UNDERSEA VEHICLE TECHNOLOGY - UCONN — Storrs, Connecticut
Summer Undergraduate Research Fellow 05/25 – 08/25

- **Data Collection & Visualization**: Conducted 310 tests on lithium-ion battery cells across controlled states of health, charge, and internal short resistance. Visualized results using Power BI, Matplotlib, and Seaborn to analyze effects and trends.
- **Machine Learning Modeling & Analysis:** Built and evaluated ML models to predict short circuit status and Ohm resistance. Achieved up to 100% accuracy in short circuit classification and an RMSE of 8.84 ohms in resistance regression.

PROJECTS

AI Image Generator Web Application 01/25 – 05/25

- **Backend & ML Deployment**: Engineered a Python backend using Flask to serve a Keras Stable Diffusion 3 model, creating a REST API that processes user text prompts and manages the local image generation pipeline efficiently.
- **Full-Stack Integration:** Developed a responsive frontend with Tailwind CSS and JavaScript to communicate with the API, enabling real-time prompt submissions with suggestions, resulting in a dynamic display for the generated image.

Video Game Sales Analysis 08/24 – 12/24

- **Statistical Analysis:** Analyzed over 16,500 video game sales records across 31 platforms and 578 publishers. Utilized Python packages such as Matplotlib, Plotly, and Seaborn to visualize univariate, bivariate, and multivariate relationships.
- **Data Cleansing:** Cleaned and interpolated missing data with PANDAS and NumPy, improving dataset reliability by addressing 1.63% missing entries and enabling accurate insights on global and regional market sales trends.

2D Video Game Development 01/23 – 05/23

- **Platform Optimization:** Designed Time Evaders to leverage the unique capabilities of a wall-sized touch screen, incorporating scalable visuals, multi-touch interactions, and dynamic layouts to maximize player engagement.
- **Peer Feedback Incorporation:** Refined gameplay mechanics and user interface elements based on feedback to enhance overall usability and enjoyment, resulting in the most votes from the audience winning Top Video Game.

CO-CURRICULAR EXPERIENCE

VARSITY SAILING and CLUB ICE HOCKEY

- **Commitment:** Demonstrated strong teamwork, time management, and work ethic by contributing to two national-level teams, balancing rigorous training schedules and academic responsibilities throughout the entire school year.

ADDITIONAL INFORMATION

- Interests: Sailing, Hockey, Formula 1, Lacrosse