

# Drew Berry

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A strong technical programmer with first-class academic credentials and a passion for AI research. During my postgraduate studies, I presented my thesis to a research group and received high commendation, with a game engine I developed later adopted by another student for their own research. I've also collaborated with the University of Essex and Oracle to deploy a large language model on Oracle Cloud Infrastructure, and I am currently developing an AI-powered music recommendation app exploring generative technologies.

## SKILLS

Programming: Python (6 years), Java (4 years), SQL

Frameworks/Libraries: NumPy, TensorFlow/Keras, PyTorch, Pandas, Seaborn, scikit-learn, Matplotlib, LangChain, SQLite3, Streamlit, transformers

Tools: JetBrains suite, Git/GitHub, Jira, Google Colab, Jupyter Notebook, Oracle Cloud (OCI), Hugging Face

- Data Visualisation
- Natural Language Processing (NLP)
- Neural Network Design
- Advanced Machine Learning Techniques
- Reinforcement Learning
- Genetic Algorithms

- Predictive Analytics
- Data Cleaning and Preprocessing
- Statistical Analysis
- Technical Documentation
- Retrieval-Augmented Generation (RAG)
- LLMs

## EDUCATION

MSc Artificial Intelligence | Distinction (84%) | University of Essex Oct 2023 - Oct 2024

Relevant Modules: Machine Learning, Neural Networks and Deep Learning, Intelligent Systems and Robotics, Professional Practice and Research Methodology, Text Analytics, Game Artificial Intelligence, Physics-Based Games

BSc Computer Science | Honours Class I (76%) | University of Essex Oct 2020 - Jul 2023

Year 1: 79%, Year 2: 80%, Year 3: 73% | Dean's List for Excellence (Years 1 and 2)

Relevant Modules: Evolutionary Computation and Genetic Programming, Languages and Compilers, Network Security, Algorithmic Game Theory, Computer Security, Data Structures and Algorithms, Computer Game Programming, Software Engineering

## CERTIFICATIONS

Databases and SQL for Data Science with Python | IBM | [Link](#) Dec 2024

- Gained expertise in querying, filtering, and aggregating data using SQL to extract insights from large datasets.
- Learned to use the SQLite3 library for database management, manipulation, and visualisation in Jupyter Notebooks.
- Completed an honours module on advanced SQL techniques, including stored procedures, transactions, and joins, to handle complex database operations efficiently.

Generative AI | IBM | [Link](#) Jan 2025

- Gained expertise in using generative AI for automating ETL workflows, schema design, data pipelines, repository maintenance, and database querying, with hands-on labs and a focus on responsible AI practices and real-world applications.

## PROJECTS

MSc Thesis | Python | [Link](#) | 87.7%

- Developed AI driving models for the TORCS racing simulation, comparing the performance of genetic and PPO reinforcement learning algorithms.
- Tuned hyperparameters and reward functions for optimal results, eliciting complex driving behaviours.
- Fixed bugs in a community-written game client.
- Presented findings to both an assessor and a research group.

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AI-powered Music Recommendations App | Python | [Link](#)

- Designed and implemented an AI-powered web app using Streamlit that delivers personalised music recommendations from natural language prompts.
- Integrated a large language model with Last.fm API metadata to interpret user intent and generate nuanced, vibe-based track suggestions beyond simple genre or mood filters.

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RAG System for PDF Question Answering | Python | [Link](#)

- Deployed a LLaMA 3.2 1B model on Oracle Cloud Infrastructure (OCI) to experiment with generative AI and Retrieval-Augmented Generation (RAG) workflows.
- Developed a custom HuggingFace-compatible embedding class and integrated LangChain orchestration to build a PDF document question-answering system, improving contextual response accuracy through advanced text preprocessing with NLTK.

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Kaggle Competitions | Python | [Kaggle Link](#) | [GitHub Link](#)

- Actively participating in Kaggle competitions to sharpen my data science and machine learning skills, applying advanced techniques to real-world problems and achieving strong results in various challenges.

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Multi-Modal Emotion Classification | Team-led Project

- Participated in a team to develop a multi-modal emotion classification model combining facial emotion recognition (FER) with biosignals (ECG and GSR) for improved emotional accuracy.
- Designed and implemented data collection protocols, stimulus development, and experimental setup to support AI/ML analysis.

## EMPLOYMENT HISTORY

Concession Supervisor | Menkind Limited

Sept 2020 - Jan 2021

- Assisted customers with merchandise inquiries and selections, ensuring a positive experience.
- Applied product knowledge to provide accurate information.
- Restocked and maintained merchandise displays for a clean and organised presentation.
- Worked to a series of KPIs including upselling, display standards and stock control.

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Farmhand | DeBohuns Hall Farm

Weekends 2017 - 2020

- Helped in every area of the farm, all year round.
- This includes basic equipment operation, animal handling, maintenance, basic carpentry and construction, and the use of manual and mechanical tools.

## REFERENCES

Excellent academic references and professional endorsements from prior collaborators are available upon request.