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

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

- Data Visualisation
- Advanced Debugging Techniques
- Neural Network Design
- Advanced Machine Learning Techniques
- Reinforcement Learning
- Genetic Algorithms
- Predictive Analytics
- Data Cleaning and Preprocessing
- Statistical Analysis
- Technical Documentation
- 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

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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.

Street Fighter Clone | Java | Link

- Developed the game engine from scratch, replicating the original game's feel.
- Created and balanced a variety of attacks for engaging gameplay, with support for both player vs. player and player vs. computer modes, including a basic AI opponent.
- The engine was later used by an MSc student at the University of Essex for their thesis on reinforcement learning in a fighting game (2024).

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.

Kaggle Competitions | Python | Personal Project | 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.

During my degrees, I excelled in completing several other smaller projects, including:

- Developing an expression analyser and compiler based on a custom grammar.
- Tackling various classification and regression tasks using custom neural networks, such as an autoencoder and LSTM in TensorFlow, and a transformer model in PyTorch.

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.

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.