Tom Lam

Computer Science Student | Deep Learning Enthusiast

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SUMMARY

- First-year computer science student with a passion for machine learning and data science
- Solid foundation in Python programming, data structures and algorithms
- Familiar with data analysis and ML tools, e.g. PyTorch, Scikit-learn, Matplotlib

PROJECTS 🌐

Candycombs | HONORABLE MENTION — BRISTOL CSS GAMEJAM 2024 | *Python, Pygame* | ⬤
- Implemented a 2D Halloween-themed game as part of a team of 7
- Collaboratively developed a procedurally generated game map featuring animated characters
- Received Honorable Mention for Best Narrative and Best Gameplay

Land Cover Segmentation with UNets | *Python, PyTorch, Matplotlib, NumPy, ML* | ⬤
- Implemented UNet and ResUNet-a in PyTorch
- Trained models to perform semantic segmentation on the Multi-Source Satellite Imagery for Segmentation Dataset on Kaggle
- Visualized the segmentation results, model accuracy and IOU scores with Matplotlib

LeNet-5 from Scratch | *Python, NumPy, Pillow, ML, Linear Algebra, Tkinter* | ⬤ 📝
- Re-implemented the LeNet-5 model from Yann Lecun's paper (1998) using NumPy
- Created a handwritten digit recognition app with my LeNet-5 model
- Implemented a primitive neural network library with a handful of NN modules
    - **Layers**: Linear, Conv, Flatten, RBF, ReLU, Tanh, SoftMax, Sigmoid
    - **Criterions & Optimizers**: MSE, CrossEntropy, BCE, SGD, Adam
    - **Normalization & Regularization**: MaxPool, AvgPool, BatchNorm, Dropout

Rice Image Classification | *Python, PyTorch, Matplotlib, ML, Scikit-learn, Seaborn* | ⬤
- Created a CNN model to classify the 5 types of rice from the Rice Image Dataset on Kaggle
- Visualized model accuracy and results with graphs and confusion matrices
- Achieved an accuracy and average F1-score of over *99%*

Fuzzy Trie | *Python, OOP, Dynamic Programming, Data Structures, Unit Tests* | ⬤
- Developed a prefix-tree data structure with approximate string matching function
- Re-implemented the fuzzy search algorithm modified from Shang and Merrettal's paper (1988)

EDUCATION

University of Bristol — Bristol, UK
B.Sc. Computer Science — *Sep 2024 - Present*

University of Warwick 🎓 — Coventry, UK
International Foundation Programme in Computer Science — *Sep 2023 - Jun 2024*
- **Grade**: Distinction (*92%*) - Pure Maths 97%. Further Maths 98%. Computer Science 90%.

ORGANIZATION

Core Team Member — Nov 2024 – Present
Bristol Formula Student AI, University of Bristol — *Bristol, UK*

SKILLS

Programming languages: Python, C, Haskell
Data Analysis Tools: Matplotlib, NumPy, Pandas, PyTorch, Scikit-learn, OpenCV, Pillow
Languages: English, Cantonese, Mandarin

COURSES & CERTIFICATIONS

IBM AI Engineering Specialization ⬤
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