

CONNOR BROOKS

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TECHNICAL EXPERTISE

Languages: C, C++, Python, Shell, OpenGL, JavaScript, HTML, SQL

Software: UNIX/Linux, Bash, Git, GDB, \LaTeX , Vim, Keras, Jupyter

Electronics: Arduino, STM32, Raspberry Pi

EDUCATION

Goldsmiths, University of London

2016 - 2019

BSc, Creative Computing, First-Class Honours

- Gained a deep understanding of an array of computer science topics for use within personal creative projects.
- Languages such as C and C++ were taught in combination with OpenGL to allow the creation of audiovisual applications.
- Specialised in machine learning modules during the final year, which covered both theoretical understanding and practical applications of machine learning, mainly neural networks.

Skills: C, C++, JavaScript, OpenGL, Python, Flask, SQL, Keras

Leeds City College

2013 - 2015

BTEC, Software Development, Distinction Distinction*

- Dynamic web design using PHP and SQL.
- Event driven programming was taught using VBScript.
- The software development lifecycle was introduced.

Skills: VBscript, HTML, JavaScript, PHP, SQL

PROFESSIONAL EXPERIENCE

Full Stack Dev / Devops

06/15 - 08/15

Ginger Print & Design

- Set up and maintained a number of Linux virtual machines for use as web servers.
- Designed and developed webpages using Node.js.

Skills: Linux, Bash, cron, Node.js, HTML, JavaScript

PROJECTS

Ecosim

2019

An ecosystem simulator

- Ecosim is an ecosystem simulator written in C.
- An environment is populated by a collection of agents, each with their own genetic traits.
- These agents are represented by skeuomorphic cellular creatures rendered in OpenGL.
- The genetic traits of agents evolve over time, through a genetic algorithm and a process of natural selection.
- The changes in these traits, along with population data, can be visualised using a separate Python application.
- Featured on the frontpage of news.ycombinator.com

Skills: C, Python, OpenGL

play_stdin.sh

2019

A tool for UNIX audio streaming

- play_stdin.sh is a set of simple shell scripts that enables audio streaming between two UNIX based machines
- Designed to be portable and lightweight, no dependencies are required other than netcat.
- Originally created for personal use with a home stereo and Raspberry Pi, now has dozens of users.
- Featured on hackaday.com.

Skills: Shell, UNIX/Linux, Networking

NNBach

2019

Generating music in the style of Bach

- NNBach is a RNN designed with the purpose of generating monophonic pieces of music in the style of J.S. Bach.
- The project is written in Python and utilises the Keras library.
- A LSTM network is trained using a MIDI file. The trained network is then used to generate a short piece of music.

Skills: Python, Jupyter, Keras, Neural networks

EEGDraw

2018

A brain training application

- EEGDraw is an audiovisual application that represents the users brainwaves, via graphics and sound, in a way similar to an music visualiser.
- Brainwave data is collected via a EEG game's headset using an Arduino to intercept serial data from the EEG chipset. The data is then sent to a C++ application.
- Graphics are procedurally generated using OpenGL shaders and audio is synthesised using C++.

Skills: C++, Electronics, OpenGL, DSP