Ben Snow

Research Engineer

I am an independent and driven third-year Engineering Doctorate student on a 3-year industry placement with Griffon Hoverwork Ltd until September 2023. I am building a realistic hovercraft training simulator for trainee pilots using data generated from real-life hovercrafts. My research directions include machine learning applications for hovercraft training and trajectory prediction. As a Research Engineer, I am always open to new and interesting research directions and opportunities.

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PROGRAMMING SKILLS

Python | Tensorflow | Keras | Pytorch | OpenCV | Git | Numpy | Pandas | MATLAB | C++ | Unreal Engine 4 | C# | Unity3D

RESEARCH INTERESTS

- Computer Vision
- Machine Learning
- ML Operations
- Physics simulations

EDUCATION

EngD: Doctor of Engineering (Year 3)

Bournemouth University - Centre for Digital Entertainment

09/2019 - Present

Experience

- Data Mining and Analytic Technologies (91%) and Computer Vision with Python (86%) masters units
- C++ development in Unreal Engine 4 of a Realistic Hovercraft simulator for training pilots
- C# Unity development of digital game for drone delivery

MPhys: Master of Physics

University of Manchester

09/2015 - 06/2019 *2:1 Upper second-class honours*

Experience

- Relevant Masters Units: Linear Algebra, Advanced Experimentation, Statistical Mechanics
- Masters thesis: Magnetotransport in thin cobalt films for spintronics applications
- Year abroad at the University of Maryland College Park, USA - Graduate Solid State Physics, Scientific Computing, Quantum Physics, Accelerator Physics

WORK EXPERIENCE

Research Engineer

Griffon Hoverwork Ltd

06/2020 - Present *Remote, UK*

Achievements/Tasks

- Wrote bi-weekly reports and held meetings with stakeholders to provide updates on project progress
- Scoped, designed, coded, and delivered a usable Hovercraft simulator 12 months ahead of schedule on a 3 year industry placement
- Created automatic post-flight debriefing report executable program in python using data generated from simulated hovercraft
- Produced a series of promotional videos of simulator progress: https://youtu.be/fW1yrfLfIqA

Contact : Prof Jian Chang - jchang@bournemouth.ac.uk

Research Assisstant

E-drone project - Bournemouth/Southampton/UCL/Leeds Universities

02/2022 - Present *Remote, UK*

https://www.e-drone.org/

Achievements/Tasks

- Designed and prototype digital game for drone delivery in Unity3D C#

Contact : Prof. Janet Dickinson - jdickinson@bournemouth.ac.uk

SOFTWARE PROJECTS

Depth prediction using video game data using machine learning (03/2020 - 06/2020)

- Generation of over 15,000+ RGB/Depth images for use as a training dataset from Grand Theft Auto 5
- Used Pytorch and OpenCV to create a densely connected convolutional network to predict depth from still frame images

An analysis of different neural network classification algorithms for identifying foetal wellbeing (09/2019 - 12/2019)

- Used a Google Colab based Jupyter notebook along with Keras, Numpy, and Pandas to analyse a large medical dataset to help detect severe foetal health problems
- Used Adaptive Synthetic upsampling to increase learning capability in a very unbalanced dataset

A finite-difference approach to solving the Navier-Stokes equations for the 2-D Lid Driven Cavity problem (01/2018 - 04/2018)

- Derived a finite-difference scheme from first principles for solving the Navier-Stokes equations on a grid
- Used MATLAB to visualise the velocity and pressure fields calculated from the finite-difference scheme