CURRICULUM VITAE

PERSONAL DETAILS

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CURRENT STUDIES

Dates	Qualification	Institute
September 2018 – ongoing	Artificial Intelligence and Computer Science (BSc Hons)	The University of Edinburgh

ACADEMIC QUALIFICATIONS

Ongoing – Artificial Intelligence and Computer Science (BSc Hons)at The University of Edinburgh

First Year: 6 As (Intro to Computation, Object Oriented Programming, Data and Analysis, Cognitive Science, Intro to Linear Algebra, Calculus and its Applications), 1 B (Proofs and Problem Solving)

Second Year: 7 As (Reasoning and Agents, Intro to Software Engineering, Discrete Mathematics and Mathematical Reasoning, Intro to Algorithms and Data Structures, Intro to Computer Systems, Learning, Probability with Applications)

Third Year: 6 As (Intro to Vision and Robotics, Informatics Large Practical, Professional Issues, Introductory Applied Machine Learning, Computer Security, Operating Systems), 1 B (Systems Design Project)

August 2018 – Advanced Highers: 3 As (Math, Computing Science, Physics)

August 2017 – Highers: 4 As (Math, Computing Science, Physics, Graphic Communication); 1 C (English)

August 2016 – National 5: 7 As (Math, Computing Science, Physics, Design Manufacture, Chemistry, English, French); 1 B (Graphic Communication)

OTHER QUALIFICATIONS

Obtained	Qualification	Institute
June 2018	Suicide Alertness For Everyone	LivingWorks NHS Scotland
June 2017	Level 1 Award in Coaching, Parkour/Freerunning (QCF)	1st4Sport, Parkour UK
October 2016	Emergency First Aid Workshop for Parkour and Freerunning	IMPACT First Aid Training
October 2016	Safeguarding and Protecting Children	Sports Coach UK

PREVIOUS EMPLOYMENT AND INTERNSHIPS

June 2019	Computing summer camp coach Firetech	Teaching Python to children aged 10-18 years Designing teaching sessions to fixed learning criteria
July 2019	Programmer Robotical Ltd, Edinburgh	Developing addons for Marty V2 (The second version of their robot) Programming, Communicating with Product Designer, Basic Circuit Design
June 2021	Game Developer Yaldi Games	Developed game system and features including A weather manager (and effects) in c++ for unreal engine
July 2021	Software Developer/Scholarship Recipient ThorLabs	Developing core systems in their software with C# and .NET Debugging hardware communication protocols

ADDITIONAL ROLES AND INTERESTS

I was voted in as the second-year representative for the Edinburgh University Computing Society (CompSoc), which involved being at meetings and ensuring the interests of second-year students were represented during votes and discussions.

I am currently running the Game Development Special Interest Group of CompSoc; this involves finding and reaching out to speakers and designing and running workshops for our members.

I am a game developer for ToonTown: Corporate Clash, a community upheld version of the Disney MMO ToonTown: Online, an MMO written using Python and the Panda3D game engine.

SKILLS AND EXPERIENCE

Programming Languages	• C
	  ○ I have extensive experience with C. I used it while working for Robotical developing a graphics manager for their screen face, which included working with the Unix filesystem, OpenGL and sockets. I have also used C in many Arduino projects.
	• C++
	  ○ I learnt C++ to use for my dissertation project, a real time volumetric rending algorithm using QNET to speed up integration as well as a computer graphics coursework in which I had to build a raytracer from the ground up. Since learning C++ I have also used it for coding challenges, personal projects and game development with the unreal engine.
	• Python
	  ○ I have extensive experience in Python. I used it for my Advanced Higher Project where I made a Space Invaders clone, a terminal-based game of snake and a Neural Network Library, and most recently I have been using Python while developing for ToonTown: Corporate Clash.
	• Java
	  ○ I have moderate experience in Java. I used Java, specifically Processing, to create small graphical projects to learn about Perlin Noise. For example, I created a random 3D terrain generator with options for a heightmap, rainbow projection (static colours while the terrain moved underneath) or rainbow texture (colours moved with the terrain). Most recently, I have been using Java in my Informatics Large Practical, a semester-long unguided project for University in which we produced a program that planned an optimized flight path for a drone to visit sensors at provided locations.
	• Haskell
	  ○ I have extensive experience in Haskell. I used Haskell in my Introduction to Computation course at University, specifically for the Functional Programming module and for making finite-state machines for the Logic module. I also used Haskell to create a 3D rendering engine for a 3D game of life.
	• C# & .NET
	  ○ I needed to learn and use C# and .NET for my intern/scholarship position at Thorlabs, which is used to debug and build new systems for their user facing software solution, Kinesis.
	• I have developed familiarity with other languages including:
	  ○ Regex, JavaScript; Php; SQL, HTML, CSS, Visual Basic, LaTeX

Electrical Engineering/ Computer Architecture	When I was young (8 and 13), I built two 3D printers from kits. From this experience, I learned how to follow technical instructions effectively. This was my first introduction to Computers, Electronics and Mechanical Engineering. At 16 I designed and constructed a Turing-complete 8-bit processor on breadboards, using basic logic chips and various other components. I undertook this project for my own interest as I wanted a better understanding of low-level computing. In the process of building this project, I learned about finding and sourcing parts, practical problem solving, project management and effective troubleshooting. I have taken Operating Systems and am taking Computer Architecutre and Design as well as Parallel Architectures course at university.
Artificial Intelligence & Machine Learning	In the second year of my degree I took the course ‘Reason and Agents’ where I studied approaches relating to representation, reasoning and planning for solving real world inference. This included search based planning, situation calculus, propositional and first order logic, partial order planning and probabilistic reasoning. I have takien the course ‘Introductory Applied Machine Learning’ in which we are learning about predictors and the algorithms used to train (or build) them. I am also taking the ‘Introduction to Vision and Robotics’ course where I'm learning about image processing and computer vision along with methods of representing and controlling robots, including kinematics. My diseration is concerned with methods of integrating functions represented by neural networks using the weights of those networks.

GITHUB PROJECTS & COMMUNITY PROJECTS

My Personal Website: https://github.com/yanniknelson/yanniknelson.github.io or to visit as a website https://yanniknelson.github.io

Haskell 3D Game Of Life: https://github.com/yanniknelson/CodingChallenge (A team-mate made the repository, this is forked)

LED Mask: https://github.com/yanniknelson/Mask-Code 8-Bit CPU: https://yanniknelson.github.io/Blogs/BreadBoardCPU.html

Toon-Town: Corporate Clash: https://github.com/CorporateClash, their website: https://corporateclash.net/