Oisín Carroll

Software Engineer · Machine Learning Specialist

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Summary

A CS masters student in Trinity College Dublin, specialising in neural networks & machine learning. Having taught himself programming at an early age, he's spent the last 8 years working on projects ranging from AI to esolangs to game development. Loves nothing more than being challenged and learning new things, and isn't afraid to work hard to get there.

When he's not at a computer, enjoys juggling (especially passing patterns), table tennis, and trying to draw despite having no real aptitude for it.

Skills

Languages	**Very Good**: C#, C++, C, Haskell, Python. **Good** Java, Prolog, Javascript. **Basic**: Lua, Lisp, Objective-C, MATLAB, LaTeX.
Machine Learning	**Good**: Tensorflow, Keras, Scikit-Learn, Jupyter/IPython Notebooks, Docker (for training/ deployment), OpenCV, **Basic**: OpenAi-Gym/Universe, DLib.
Web Development	**Good**: ASP.NET, Python-Flask, Bootstrap, **Basic**: HTML5-Canvas, Node.js, React
Other	**Very Good**: Algorithms & Data Structures, OOP Patterns, **Good**: Source Control/Git, Functional Programming, Computer Graphics & Shaders, Parallel Programming/Algorithms.

Work Experience

Syze.ai

Dublin, Ireland

Cofounder & CTO — *Jun. 2017 - Aug. 2018*

- Worked on a smartphone app that allows users to take their measurements with the goal of reducing returns for online clothing retailers.
- Developed an algorithm that can, given 2 photos of a person — front and side — reconstruct a 3D mesh of them with all measurements +-1cm. This works well even if they're not wearing tight fitting clothing.
- Lead the team of 2 remote researchers.
- Pitched on behalf of the company.
- Syze.ai has currently raised 30k in funding, and is in the final stages of getting government grant for 200–300k.
- The company's measurement stack runs in python, using Keras (Tensorflow backend), and Shapely/trimesh for managing mesh data. Some of the training data is generated through a Blender plugin to generate rendered, randomized, human meshes based on a database of ~5000 human scans.
- Camera calibration and distortion-correction is done using OpenCV.
- Training of the models is done in Docker containers, on Trinity's computing cluster.

Virtual Access

Dublin, Ireland

Software Developer — *Jun. 2016 - Jun. 2017*

- Developed a configuration system for routers, developing the front end UI.
- Worked in a team of 3 to replace the legacy system that was becoming costly to maintain.
- Built the front end, using C#, ASP.NET, jQuery, and Bootstrap.
- Optimized the loading of the config data, speeding up loading of the program by 20–30x.
- Built on the system which validates the data both upon load and upon change from the client.
- I interned over the summer, then continued to work part time over the following year while in college.

Honors & Awards

Programming Competitions

2018	**86th (/4800+ teams) (1st in Ireland),** Google Hashcode, this year was to create routes for self-driving taxis.	*Worldwide*
2017	**3rd Place,** Huawei 3xD Coding Challenge, challenge to build AI for social good.	*Dublin, Ireland*
2016	**Finalist, Top-8,** Man AHL Coder Prize, build an AI to play a board-game called Hexplode.	*London, UK*
2015&6	**Winner,** 1st in Ireland both years in UKIEPC, an algorithmic programming competition.	*Dublin, Ireland*

Other

2017 **Trinity Foundation Scholarship**, The highest category of scholar awarded, given to the top 7-10 students across all fields and courses in the collage each year for excellence in a set of optional exams. This affords free accommodation and waved fees during the student's time in college. *Dublin, Ireland*

2017 **ARUP Innovation Award**, Received the award for 'Bamboocherie', a project which developed a sustainable and cheap way of treating bamboo for use in building projects in Nepal. Used old bicycle inner tubes, pop bottles, and tubing to create a system capable of chemically treating bamboo, increasing it's lifespan by 3-5 times and it's strength 10-15%. *Dublin, Ireland*

Education

School

Trinity College, School of Computer Science — *Dublin, Ireland*

Computer Engineering — *2015 - Expected 2020*

- Currently in 4th year of a 5-year integrated masters course.
- Studied computer vision, graphics, and deep learning, as well as math modules including vector spaces, projection and advanced calculus.

St. Conleth's College — *Dublin, Ireland*

Secondary School — *2009 - 2015*

- Received 530 points in the leaving cert (high school final exams), including an A+ in both Mathematics and Applied Mathematics.

Self Study - Online Courses

2017 **Machine Learning**, Andrew Ng, Stanford University
2014 **Intro to AI**, Pieter Abbeel, UC Berkeley

Self Study - Books

2018 **Catagory Theory for Programmers**, Bartosz Milewski
2018 **The Deep Learning Book**, Ian Goodfellow, Yoshua Bengio, and Aaron Courville
2017 **Learn Prolog Now!**, Patrick Blackburn, Johan Bos, and Kristina Striegnitz
2016 **Learn you a Haskell!**, Miran Lipovaca

Extracurricular Projects

2016-Now **Open Source**, Contributing to several open source projects used by around 50k people worldwide, including Spacemacs (emacs distribution) and the Godot game engine.

2016-Now **Is the Lizard a Wizard?**, A puzzle game centered around a procedurally animated lizard moving over 2d and 3d geometry. Puzzles are based on M.C. Escher drawings and other isometric illusions. C#, Unity, Later: Godot.

2018 **Fake News**, Facebook plugin which flags articles which are likely to be poor quality journalism based on the way these articles attempt to incite a reaction from their users (NLP, machine learning). Tensorflow, webkit.

2017 **BrainFast**, One of the fastest interpreters for the BrainF*ck esolang. An experiment in trying to write very optimized code. C++.

2016-Now **Project Euler**, Solved over a hundred of the online maths/ programming puzzles at projecteuler.net. Haskell, Math.

2014 **Knights of the Round**, A pixel art clone of the Risk board game for IOS. Featuring procedurally generated islands and AI. Java, LibGDX.

2011 **Siteswapper**, My first app, a juggling pattern visualiser and generator for IOS. Allows the user to type in patterns using juggling notation 'siteswap', and then see and toy around with different throws. Obj-c, cocos2d.