Tom Harley

tom@magnostherobot.co.uk

Experience

Python Course Lead Instructor   Jan. 2019–Aug. 2020

I lead the St Andrews *Code First: Girls* Python course, a programme incentivising diversity in tech. Involves organising and leading weekly lessons, and communicating with CF:G headquarters and student ambassadors.

Audio Engineer   Mar. 2018–Aug. 2020

Audio editor for *Citizens of Nowhere*, the largest student-run radio drama in the UK. This job includes managing recording equipment, archiving and curating raw recorded audio, and editing episodes together from raw.

Year Representative   Sep. 2018–Sep. 2019

4th-year student representative in the Computer Science Department at the University of St Andrews. This involves improving the quality of experience for students and overseeing structural change to the department.

Committee Tech Representative   Sep. 2018–Sep. 2019

Responsible for purchasing and managing equipment for *Airwaves St Andrews*, a student project group focussed on audio-driven performance art.

Education

I graduated from the University of St Andrews with a BSc. in Computer Science in 2020.

5th year Individual Masters Project (*Sinter: an Intermediate Functional Programming Language*); Software Architecture; Information Visualisation; Data-Intensive Systems; Knowledge Discovery and Datamining.

4th year Major Software Project (*Hidden Information in Solitaire Games*); Computer Architecture; Logic and Software Verification; Programming Language Design and Implementation; Constraint Programming; Computer Graphics; Concurrency and Multi-Core Architectures.

3rd year Software Engineering Team Project (*Medical Project Server*); Operating Systems; Data Encoding; Artificial Intelligence; Databases; Computational Complexity; Component Technology.

	High School			Languages	
Mathematics	S.Q.A. Adv. Higher	B	C	Java	C++
I.C.T.	S.Q.A. Adv. Higher	B	Python	Haskell	Bash
Physics	S.Q.A. Adv. Higher	C	Nim	C#	LaTeX
English	S.Q.A. Higher	A	Javascript	TypeScript	Perl
Biology	S.Q.A. Higher	A	Elm	Idris	Clojure
Chemistry	S.Q.A. Higher	A	Scala	Visual BASIC	Essence'

Projects

CZInspect   github.com/magnostherobot/czi-tools

Heavy-duty single-threaded file reader and converter of *Carl Zeiss Image* (`.czi`) files, developed over a summer in free time. Used in the Computer Science Department of the University of St Andrews in collaboration work with the Medical Department. Written in C.

LongPong   github.com/magnostherobot/longpong

A version of Pong that can be played across multiple adjacent screens, either on the same or an arbitrary number of separate computers. Winner of the University of St Andrews' 12-hour hackathon *Hack the Bubble* in 2017. A Python client with a NodeJS game server.

Machines   github.com/magnostherobot/machines

A Turing machine emulator written in Nim as coursework and for use in determining computational complexities of algorithms. Fast emulation of large machines, and supports non-deterministic machine descriptions as well as pseudo-compilation of machines.