David O’Donohue

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<https://github.com/davidodonohue>

## Personal Projects

### Fly

Fly is a basic game I created while learning JavaScript. It is based on the helicopter game.

<https://davidodonohue.github.io/fly.html>

### Flexible Psyche

Flexible Psyche is a website I am developing for my wife, who is a clinical psychologist intending to open a private practice. <https://davidodonohue.github.io/rosalie.html>

### TutorHelper

TutorHelper contains several python scripts which automate repetitive tasks involved in tutoring, such as creating feedback templates and sending the finished product en masse.  
<https://github.com/davidodonohue/tutorhelper>

### Tic Tac Flow

Tic Tac Flow is a graphical implementation of tic tac toe using the tkinter package. It features an AI opponent implemented using the negamax algorithm with alpha-beta pruning as an optimisation.  
<https://github.com/davidodonohue/tic-tac-flow>

### Logicosm

Logicosm is a command line interface python program which gamifies mathematical practice and encourages pattern seeking in children.  
<https://github.com/davidodonohue/logicosm>

### XOR-Encryption

XOR-Encryption is a python script which can encrypt and decrypt files and folders using the XOR operator on the bytes of a file and a key, which can be chosen or randomly generated.  
<https://github.com/davidodonohue/xor-encryption>

### Neuroevolution

Neuroevolution is a python program which uses an evolutionary algorithm to train neural networks through mutation across successive generations.  
<https://github.com/davidodonohue/neuroevolution>

## Experience

### Science Mentors ACT, Computer Science Mentor Jan 2019 – Present

In this volunteer role, I am mentoring a grade 9 student through a research project in computer science. We wrote a scissors-paper-rock bot which uses machine learning to exploit the inability of humans to choose moves which are truly random. We also described a mathematical conjecture which revealed insights into the assumptions of the machine learning framework.

### Veritec, Associate Consultant Jan 2019 – Present

I worked autonomously to support other project members to deliver a detailed design document to the client. I created and ran a workshop on inter- and intra-personal skills. I developed a proof-of-concept web form for the Department of Agriculture using and integrating a static webpage, JavaScript, and an Azure LogicApp to send information and files <https://davidodonohue.github.io/dawr-poc.html>.

### Australian National University, Computer Science Tutor Jul 2017 - Present

I am responsible for helping classes of first year students to successfully complete the course, as well as marking their assignments and providing them with feedback. I independently created video tutorials on the topics most students found the hardest (<https://www.youtube.com/channel/UCalf_ITbJtXeo3mWtMMVRkQ>), and am consistently a top contributor on the online forums. In the second semester of 2018, my class showed the greatest improvement between their average performance on the mid-semester exam and their average performance on the final exam.

### Big Improvements Tutoring, Tutor Jul 2016 – Jul 2017

### Primary caregiver for infant Jun 2016 – Dec 2018

### Department of Health and Human Services, Provisional Psychologist Jan 2014 – Jan 2015

### PsychologyWorks, Psychologist Sep 2013 – Dec 2013

### University of Tasmania, Provisional Psychologist Jul 2012 – Jun 2013

### University of Tasmania, Research Assistant Jul 2012 – Feb 2013

## References

Ekaterina Lebedeva  
0478 530 478  
Ekaterina is a lecturer at ANU and a recipient of the EW Beth Dissertation Prize. She employed me to tutor COMP1100 at ANU.

Prithvi Reddy  
0468 776 945  
Prithvi is a PhD candidate at ANU and a co-founder of [thaum.io](https://thaum.io). He tutored COMP1100 at ANU with me.

Kristen Webb-Foss  
0439 383 721 [kristenalicewebb@gmail.com](mailto:kristenalicewebb@gmail.com)  
Kristen is the manager of Anglicare’s Disability Clinical Team. She was the Senior Practitioner for the disability sector when I was working there.

Martine Fourie  
0401 134 254  
Martine is a speech pathologist and a psychologist who worked with me in the disability sector.

## Education

Master of Psychology (Clinical) (2012 – 2015)

Bachelor of Psychology with Honours (2008 – 2011)

## Skills

* Python
* Haskell
* Bootstrap
* CSS
* HTML
* Git
* Java
* C

## Extras

* Baseline security clearance
* Introduction to Computer Science and Programming using Python (Certificate from MIT through edX)
* Boyapati Computer Science and Mathematics Prize (2015)
* Commendation from the Deputy Dean of Science Education (2015)
* Mensa Australia Member
* Golden Key International Honours Society Member