David O'Donohue

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I am an experienced software developer with a diverse range of experience. I rapidly acquire technical expertise and leverage my eclectic breath of experience to create, implement, and refine technical solutions to business problems. I have a strong interest in reducing human error and workload through the automation of tasks, and the design of elegant solutions to complex problems.

Work Experience

Dev Ops Engineer *Cogito Group* *Sept 2019 – June 2020* *NV2 security clearance*	In this role I use Gitlab pipelines to automate deployment to a server. I implemented features on an application which used REST API webhooks to synchronise task management instances, reducing project manager workload. I used Go (Golang), JavaScript (React/Redux/Node), and C# while developing, bug fixing, testing, and performing code reviews for applications in a microservices environment with a PostgreSQL database. I was involved in creating unit tests and automated tests, as well as performing integration tests, for these applications.
Computer Science Mentor *Science Mentors ACT* *Jan 2019 – Dec 2019*	In this volunteer role, I mentored 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.
Associate Consultant *Veritec* *Jan 2019 – Sept 2019* *Baseline security clearance*	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 orchestrate the flow of information.
Computer Science Tutor *Australian National University* *Jul 2017 – Dec 2019*	I was 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 and was consistently a top contributor on the online forums. In the second semester of 2018, my class showed the greatest improvement between their performance on the mid-semester exam and their performance on the final exam.

Skills

Go (Golang)	Python	JavaScript
C	Git	Haskell
PostgreSQL	Microservices	Testing
REST API	CI/CD	Agile

Awards and Affiliations

Boyapati Computer Science and Mathematics Prize for First Year	Australian National University, 2015
Commendation from the Deputy Dean of Science Education	Australian National University, 2015
Golden Key Honours Society	2012

Personal Projects

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
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
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
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
Fly	Fly is a basic game which I created while first learning JavaScript. It randomly generates hoops with normally distributed size, responds to touches on a mobile, adjusts its size to fit the browser window, and uses cookies to remember high scores. https://davidodonohue.github.io/fly.html
Logicosm	Logicosm is a command line interface python program which gamifies mathematical practice and encourages pattern seeking in children. https://github.com/davidodonohue/logicosm