

Jonathan Whitaker

A creative individual with a passion for acquiring new skills and using those skills across disciplines to make the world a slightly better place.

EDUCATION

Currently third year Electrical and Computer Engineering at UCT
Dean's list for the first two years, GPA of 74%.

Cambridge A Levels
St Johns College - A*s in Maths, Physics and Chemistry

SATs
2200 for SAT, 2360 for SAT Subject Tests 760 for Reading, 750 for Math, 690 for Writing.
800 for Mathematics 2, 800 for Physics, 760 for Chemistry

WORK

Vacation work

University of Cape Town, White Lab. June - July 2017
Worked on a project which involved building a jig to assist with programming a microcontroller and upgrading the firmware of a device. This involved some CAD work, setting up a raspberry pi computer and writing a python library that used lib-USB to communicate with the bootloader of STMicroelectronics ST-Link v2 debugger. Part of this was also reverse engineering the ST-Link's firmware upgrade protocol and figuring out how to encrypt the firmware files in a way that would be decipherable by the bootloader code. 1 month of work in total.

Vacation Work

Assisting with Elephant Research in Hluhluwe-Impholozo Park, May 2017
Developing software to assist with elephant population monitoring. This involved flying down to the park on two separate occasions to work with the Principal Investigator Timothy Kuiper on the elephant monitoring program there. My role was initially to develop an application for rapid manual photo-identification of elephants sighted in the park, but soon expanded as I extended the application with more features, assisted with scripts to automate the processing of raw location data into a useable form and planned further development of a full software suite for elephant monitoring, population estimation and identification. I've also ended up running a bunch of CPU intensive simulations over the last few months as the need arises - my beefy PC being much more suited to the task than the laptop that was doing the task.

Research Assistant

Working with UCT's Neuropsychiatry (SP) Department, 2015.

Helping Dr Samantha Brooks with some of her addiction research. Building scripts to automate the pre-processing of fMRI data and then analysing said data. Also presenting the (relatively new) methods we were using to the Progressive Neuropsychiatry Group of Cape Town. I also wrote a python application to quickly visualize a time series of scans and show regions of high activity. Although the project didn't turn into a publication, it was an effective crash course in neuroscience, matlab and bayesian statistics.

Consultant

Resource assessments, sustainability and research, 2014.

Worked with Clare Griffiths (ref) on a series of projects for Phytotrade Africa and Bio-Innovation Zimbabwe (BIZ). Each project had its own unique challenges, but most involved literature reviews, data collection, GIS work, some form of analysis and writing up reports or papers. The purpose of this research was to provide information to local businesses with the aim of developing indigenous plant species commercially and thus providing a sustainable source of income to some of Zimbabwe's most marginalized people.

INTERESTS

Music

Rock Climbing and Hiking

Hobby Electronics

Linux and Open Source

Ballroom Dancing

Assorted smaller hobbies: Art, birding, slack-lining, lock picking, rubics cube speed solving, recreational mathematics, cosplay etc etc.

CONTACT

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