Dean T. **Kayton**

SOLUTIONS ARCHITECT

Cape Town, South Africa

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Summary

Remote working techie who enjoys living in fun and adventurous locations off the beaten track. Currently residing in Kosi Bay where I get to do things like watch baby turtles hatching, dive and snorkel beautiful reefs, pop over to Mozambique for day trips, sleep in caves in the middle of nowhere. During the week I am connected up to electricity and wifi, eyes glued to a laptop screen all day, navigating the internet for answers to problems which need solving. I enjoy programming, data science and statistics. Fascinated by artificial intelligence and machine learning, something I am getting more and more involved in. Eager to learn and pass on knowledge. Strive at all times to 'be the mentor I wish I had'. I value a company which contributes to free and open-source projects. I am specifically looking for a company providing solutions which have a meaningful impact to society, especially focusing on solving the problems of those in the bottom of the wealth pyramid.

Skills

DevOps / QA	Ansible, Docker, Singularity, Vagrant, Packer, Terraform, Jenkins, Gitlab CI, JMeter
Services	Elasticsearch, Logstash, Kibana, Apache Storm, OpenVPN
AWS	Aws-cli, Kinesis, EC2, ECS, Fargate, S3,
Back-end	Django, REST API, Hugo
Programming	Python, Bash, Julia, MATLAB, Octave
Libraries	Numpy, Pandas, Scikit-learn, Matplotlib, Pytest, DocOpt
Languages	English

Experience

HIV Diversity group, Division of Medical Virology, Department of Pathology — *University of Cape Town, South Africa*

BIOINFORMATICIAN — *Oct. 2018 - Dec. 2019*

- Maintained and extended a web app used to manage blood sample storage and related information, written in Django Python web framework. Dockerized the web app in order to ease reproducing the development environment and simplifying the deployment to production.
- Wrote data processing pipeline in Julia and Python programming languages for long read Pacbio DNA sequences.
- Assisted in machine learning project proposal. Explored data in Orange, a data-mining tool. Prepared data using Pandas, encoded data, applied feature-scaling and feature-selection, performed principal component analysis

OpenDNA — *Cape Town, South Africa*

BACKEND ENGINEER — *May. 2017 - Oct. 2018*

- Responsible for deploying and maintaining cloud infrastructure on Amazon AWS, including: Elasticsearch search engine Cluster, Centralized and highly available logging system, where micro-services sent logs to a real-time data processing platform (Kinesis) to be processed by Logstash, Apache Storm, a distributed realtime computation system, OpenVPN, to allow access to internal services to remain private
- Encouraged team to adopt a DevOps culture, making operations tasks a shared and automated process where possible Team members were enabled to submit build automation features and fixes via source-control rather than handing off to an ops team Containerization of microservices using Docker simplified configuration and allowed developers to simulate the production environment more closely
- Developed CLI tools, frameworks and scripts in Python Developed an automated API testing framework using pytest library Created a reporting dashboard with automatic Jira issue handling dependent on deployments status. This allowed QA to know which issues were present in the current build. Developed API endpoints and appropriate level of functional tests to guard against regression Developed database clean up and various other scripts to ensure once-off tasks were carried out effectively

VOSS — *Cape Town, South Africa*

SOFTWARE QUALITY ASSURANCE ENGINEER — *Jul. 2015 - May. 2017*

- Managed test coverage and integration with nightly automation, extending Python based framework with functionality as required
- Executed load testing of analytics platform using JMeter and reported with Pandas and Matplotlib Python libraries

Trafficon — *Cape Town, South Africa*

TRANSPORT ENGINEER — *Aug. 2014 - Jul. 2015*

- Built and presented microscopic traffic models and simulations using PTV Vissim, which allowed traffic demand and queuing bottlenecks to be predicted
- Planning and scheduling public transport and traffic signal timings
- Wrote Python scripts to extend model functionality to control minibus taxi departures and arrivals at a depot and to simulate the logistics of an indoor multi-story parking system

Extracurricular Activity

Cape Diff   *Cape Town, South Africa*

Founder   *Aug. 2018 - Dec. 2018*

- An open group interested in collaborating to produce and make use of free and open-source software I planned a fortnightly meet up where enthusiasts, students, entrepreneurs and non-profits could get together and work on real problems

OpenAI Retro Gaming contest   *Worldwide, Online*

Participant   *May. 2018 - Jun. 2018*

- The aim of the contest was to develop AI to play Sega's Genesis/Megadrive Sonic series, being faced with levels unavailable to train on (producing AI that generalizes well)
- I threw myself into the deep end (I am yet to cover some fundamentals in reinforcement learning), but simply familiarizing myself with some baseline algorithms and packaging it together with some Docker knowledge, I was placed 32 out of 229 on the leader-board (Team: Broken-Robot)
- In order to brush up on fundamentals I am reading Reinforcement Learning: An Introduction, second edition(2018) by Richard S. Sutton and Andrew G. Barto

Lightning Talk, SPAN Digital   *Cape Town, South Africa*

Speaker   *Nov. 2017*

- Infrastructure as Code: Getting DevOps tools to do the stuff Data Scientists don't want to, How to use tools like Packer, Docker and Vagrant to manage infrastructure as code

#AccessCPT Transport Hackathon   *Cape Town, South Africa*

Participant   *Mar. 2017*

- Integrating with WhereIsMyTransport API to develop proof of concept for a futuristic public transport system with adaptive stops and line routing

Certificates

Jul. 2019 **Machine Learning**, Stanford|Online   *Coursera, Online*
Nov. 2016 **Machine Learning Foundations: A Case Study Approach**, University of Washington   *Coursera, Online*
Aug. 2015 **6.00.1x: Introduction to Computer Science and Programming Using Python**, MITx   *edX, Online*

Education

Durham University   *Durham, United Kingdom*

MEng(Hons) Civil Engineering   *Oct. 2008 - Jul. 2013*

- Thesis: Genetic algorithms applied to the optimization of steel space-frame roof structures