Dean T. **Kayton**

Solutions Architect

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Summary

A versatile tech enthusiast with hands on experience in back-end development, QA, Automation, DevOps and Cloud Deployments. Has interfaced with a variety of fields such as Transportation Engineering, Unified Communications, Web Analytics and Bioinformatics.

Possesses a broad knowledge of current technologies but aims to specialize in the fields of Reinforcement Learning.

Firm believer in infrastructure as code and frequently utilizes well adopted mechanisms to ensure that code is easily accessible and deploy-able in production.

Languages and Technologies

DevOps / QA	Ansible, Docker, Singularity, Vagrant, Packer, Terraform, AWS-CLI, Jenkins, Gitlab CI, JMeter
Services	Elasticsearch, Logstash, Kibana, Apache Storm, OpenVPN
AWS	Kinesis, EC2, ECS, Fargate, S3, RDS,
Frameworks	Django, Hugo
Programming	Python, Bash, PowerShell, 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 Django based system used to manage HIV blood sample storage and related information
- Wrote a pipeline in Julia and Python for processing DNA sequence information
- Performed Machine Learning research proposal feasibility study in which funding was granted
- Designed and implemented a Django based sequence database which allowed traditionally file backed sequences to be extended with meta-data and filtered

OpenDNA

Cape Town, South Africa

Backend Engineer — *May. 2017 - Oct. 2018*

- Drove adoption of DevOps culture amongst team, making ops tasks a shared and automated process where applicable
- Produced centralized logging system where logs were sent to Elasticsearch via Kinesis, eliminating performance problems at peak traffic
- Tuned Apache Storm to perform at a desirable throughput, with back-pressure properly configured at peak traffic
- Containerized services using Docker to simplify configuration and allow developers to replicate production environment closely
- Developed automated Jira issue handling, aiding QA and management to track relevant stories and their deployment status

VOSS

Cape Town, South Africa

Software Quality Assurance Engineer — *Jul. 2015 - May. 2017*

- Managed automated test coverage and CI/CD, extending Python based framework with functionality as required
- Drove team discipline to follow best practice git strategies and treatment of virtual machines as ephemeral, eliminating unreproducible changes
- Mentored intern with little technical background, who secured permanent position in QA (remained in position for over 2 years)
- Solved compatibility issues of GNU/Linux users using Webex to connect to meetings, by building and hosting a Docker container
- Introduced staging environments which enabled developers to contribute to automated tests, distributing QA responsibility amongst team
- Gained technical knowledge of the Microsoft Skype for Business and Exchange products, often approached for insight

Trafficon

Cape Town, South Africa

Transport Engineer — *Aug. 2014 - Jul. 2015*

- Produced road traffic micro-simulation models and presentations that demonstrated traffic problems and their solutions
- Learned Python to build bespoke logic into model, allowing simulation of minibus departure and indoor multi-story parking systems

Other Interests

Reinforcement Learning: An Introduction, second edition(2018) by Richard S. Sutton and Andrew G. Barto — *Worldwide, Online*

Participant — *PRESENT*

Flash / Rehive Hackathon — *Cape Town*

Participant — *Jul. 2018*

- Extended previous transport based hackathon idea to integrated with a payment API to register journey intent even in remote areas

OpenAI Retro Gaming contest — *Worldwide, Online*

Participant — *May. 2018 - Jun. 2018*

- The aim of the contest was to train AI to succeed on unseen levels in Sega's Genesis/Megadrive Sonic series (in the hope that it would produce AI that generalizes well)
- I threw myself into the deep end (I was 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)

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

Speaker — *Nov. 2017*

- Getting DevOps tools to do the stuff Data Scientists don't want to. The presentation was on how to use tools like Packer, Docker and Vagrant to manage infrastructure as code (IaC)

#AccessCPT Transport Hackathon — *Cape Town, South Africa*

Participant — *Mar. 2017*

- Integrated 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