Kobus van Schoor

Junior DevOps Engineer

PROFILE

Address
Pretoria, South Africa

Website
https://kobusvs.co.za

Email Address
v.schoor.kobus@gmail.com

Github
kobus-v-schoor

LinkedIn
kobus-van-schoor

SKILLS

Linux
4+ years of experience with Linux systems administration and security in a production environment (Debian-based distributions)

C++
Well-versed in using C++ as an OOP-language with templating and automated testing. Used for general-purpose development as well as AI.

Bash
Experienced in using Bash to write general-purpose scripts for systems administration.

Ansible
Experience in using Ansible to automate DevOps in both a production environment as well as for personal use

Embedded Development
Have developed for STM, PIC and Arduino platforms. Some experience with Verilog and VHDL for FPGA development.

Python
Experienced using Python for AI, web development, and general-purpose programming in automated test and deployment environments.

Keras, Tensorflow and Sci-kit Learn
Experience with various machine-learning frameworks such as Tensorflow, Keras and scikit-learn in a personal capacity

Django
Developed multiple websites in Django including a system to deploy jobs to a HPC cluster

3D Printing and CAD
Experienced in using FreeCAD to do part design for 3D printing. Successfully designed and printed complex multi-part systems.

Analog Circuit Design
Some experience in designing analog circuitry (mostly for University)

AWARDS

Cloudflight Coding Contest Top-35 Worldwide
Cloudflight

October 2020

Placed 32nd internationally in the 34th Cloudflight Coding Contest, a coding competition where you have 4 hours to solve problems of varying difficulty.

Entelect Challenge 2020 Finalist
Entelect Software

September 2020

Finalist in the Entelect Challenge, a programming competition where you design an AI to compete against other players. Placed 4th in the finals.

CVE-2020-9355
N/A

March 2020

Found a LPE vulnerability in a package installed by default on Fedora Workstation (networkmanager-ssh).

OBJECTIVE

I am a maker who is passionate about electronics, programming, and building intelligent systems. I want to make an impact by building things that can help other people and I'm always open to learning something new.

WORK EXPERIENCE

Junior DevOps Engineer
Momentum Investments

(January 2022 - Present)

Team Lead: Full stack Developer and Linux Systems Administrator
Department of Computer Science, University of Pretoria

(January 2021 - December 2021)

Along with my previous duties (see below), I acted as team lead for the TechTeam. My responsibilities included the following:
- Identification of new team projects, decisions on project timelines and overseeing their development
- Code review of all newly implemented major projects
- Developing a new user management portal and code auto-marking system (FitchFork) for the Department. Successfully implemented and migrated from legacy systems.
- Handling hardware procurement
- Training of new TechTeam staff

Full stack Developer and Linux Systems Administrator
Department of Computer Science, University of Pretoria

(January 2018 - December 2020)

While studying at the University of Pretoria I also worked as a full-stack developer and systems administrator for the Department of Computer Science. Working in a small team, we managed and developed the infrastructure that several critical services in the department operated on. My responsibilities included the following:
- Administration of several critical services for the Department of Computer Science including LDAP and Kerberos central authentication, course websites, auto-marker facilities and websites for research groups
- Designed the architecture and set up the MITC high-performance cluster which is used by post-graduate students to perform research on big-data machine learning applications
- Administration of several hundred lab computers running Linux with central LDAP authentication and home folder hosting for use by students
- Maintained the main CS website as well as the auto-marker assignments website

EDUCATION

BEng. Computer Engineering
University of Pretoria

(January 2017 - December 2021)

Completed BEng. Computer Engineering at the University of Pretoria. Obtained 90% for my final-year project, and a cumulative weighted average of 70.45%.

PROJECTS

Surface EMG-controlled hand exoskeleton
https://www.youtube.com/watch?v=8Nla6EqSfjQ

(March 2021 - December 2021)

The goal of my final-year engineering project, a muscle-controlled (EMG) hand exoskeleton, was to design and build a hand exoskeleton that allows people affected by hand paralysis to again use their hands to pick up and hold various objects. The exoskeleton is controlled using EMG signals (signals emitted while you contract your muscles) and uses machine-learning to allow the user to perform 5 gestures using the exoskeleton. The exoskeleton can also estimate and control the force with which the user want to close it, allowing the user to softly grasp fragile objects. Each finger is individually controlled and monitored, allowing the exoskeleton to adapt to different shapes and sizes. The exoskeleton is easily adapted to different people, just requiring the control model to be retrained. It is also fully battery powered and is small enough to easily fit on the user's arm. All the EMG amplification circuitry, as well as the control and machine-learning models, were designed and built from first principles. **Obtained a final mark of 90%.**

Dotgit
https://github.com/kobus-v-schoor/dotgit

Lead developer and maintainer of dotgit, a comprehensive dotfiles (configuration files) manager which allows you to store and organize your dotfiles on multiple machines. Active user base with a completely automated CI/CD pipeline. First developed in bash and now currently in Python.

Designed and built a 3D Printer
https://kobusvs.co.za/blog/3d-printer/

Designed, printed and built my own DIY 3D printer which I actively use for DIY projects.

MITC high-performance cluster
https://kobusvs.co.za/blog/ha-cluster-no-magic/

Designed and set up the MITC high-performance cluster for the Department of Computer Science at the University of Pretoria which is used by post-graduate students to perform research on big-data machine learning applications

E-commerce website for baking goods and packaging business
https://www.bakersparadise.co.za/

Developed an e-commerce website from the ground up in Django for a baking goods and packaging supplier expanding into online sales and deliveries.

Automated Forex trading software
https://www.mql5.com/en/market/product/15328

Developed proprietary Forex and commodity trading software to automate trading strategies. Currently in active use.

Cluedo AI
https://github.com/kobus-v-schoor/cluedo-ai

Developed an AI to play the classic board-game Cluedo for a university project. Implemented path-finding, offensive and defensive strategies and also a comprehensive set of rules to quickly deduce the other player's cards

Homelab

Built a homelab on which I maintain several services for personal use. All the services are managed using industry-standard methods (automated deployment using Ansible, microservices deployed on containers) and follow best-practices. The services include home-automation, backup solutions and data-science environments which are also used by family and friends.

Other Projects
https://kobusvs.co.za/tags/projects/

Some of the other projects I've worked on can be found on my personal website.

REFERENCES

Neels van Rooyen
Team Lead
nexusdk@gmail.com

Worked under the supervision of Neels during 2018 while he was the UP CS TechTeam lead

Prof. Nelishia Pillay
Head of Department
nelishia.pillay@up.ac.za

Served as the Head of Department for the Department of Computer Science at UP from 2018-2020. I reported directly to her in this time.