



KILIAN VOS

Data Scientist

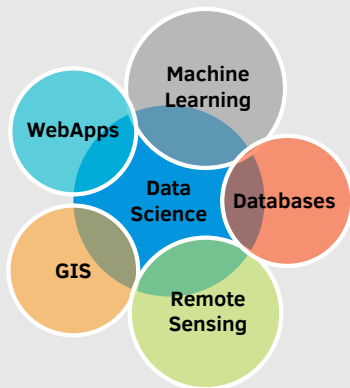
 kvos.github.io

 kvos

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Technical Skills

Overview



Programming

0 —————> 5000 LOC

Python [Pytorch, Tensorflow, Django]

JavaScript • SQL • HTML /CSS

C • Java • R

Software & Tools

Data visualisation ● ● ● ● ●

Data handling ● ● ● ● ●

Linux /Bash ● ● ● ● ●

WebApps ● ● ● ● ●

Education

PhD., Remote Sensing & Ocean Eng.

University of New South Wales
2018 - 2022 | Sydney, Australia

MSc., Environmental Engineering

Specialization: Monitoring and Modelling
Swiss Fed. Institute of Tech. (EPFL)
2015 - 2017 | Lausanne, Switzerland

BSc., Environmental Engineering

Merit Scholarship
Swiss Fed. Institute of Tech. (EPFL)
2012 - 2015 | Lausanne, Switzerland

Experience

Nov 2020 - Present

UNSW Mechanical Engineering

- Projects funded by the Defence Science and Technology Group
- **Project 1:** Early detection of mechanical faults on aircrafts from vibration signals using LSTMs and SVMs.
Tools: PyTorch, Tensorflow, LSTMs, SVMs, Timeseries regression, Jupyter Lab
Outcome: developed a robust fault detection algorithm published in Vos et al. 2022.
- **Project 2:** Development of a Reinforcement Learning framework to optimise maintenance and mission scheduling for a fleet of aircrafts.
Tools: PyTorch, OpenAI Gym, Reinforcement Learning, Q-learning
Outcome: presentation of a proof of concept for using RL to manage a fleet of aircrafts.

Jan 2022 - Present

Postdoctoral Research Fellow

UNSW Water Research Laboratory

- Development open-source toolboxes for remote sensing and data extraction from publicly available satellite imagery (Landsat, Sentinel-2).
Tools: Python, Google Earth Engine, GDAL, scikit-image, Github
Outcomes: Creation of a popular toolbox, CoastSat, with hundreds of users worldwide (400+ stars on Github).
- Collaboration with US government to generate shoreline data for the US coastline.
- Organisation of a Data Challenge and preparation of benchmark datasets.

Jul 2016 - Feb 2017

Intern, UAV startup

SenseFly SA

- Sensefly produces aerial imaging drones for professional applications including surveying, mining and agriculture (150 employees).
- Acquired experience in the workflow of drone mapping like flying UAVs, using photogrammetry software and extracting 3D models and point clouds.

Feb 2014 - Feb 2020

Graduate Teaching Assistant

EPFL and UNSW

- Teaching Assistant for Engineering courses including: *Linear Algebra, Statistics, Calculus, C programming*

Publications

- Vos et al. 2022. **Vibration-based anomaly detection using LSTM/SVM approaches.** *Mechanical Systems and Signal Processing.*
- Vos et al. 2019. **CoastSat: A Google Earth Engine-enabled Python toolkit to extract shorelines from publicly available satellite imagery.** *Environmental Modelling and Software.*
- Full list of publications available on **Google Scholar**

Awards

- **1st Prize Winner** at *Maxar Spatial Challenge*: development of a real time dashboard for coastal monitoring using Maxar imagery -> link to dashboard
- **Best Paper Award** at *Coastal Dynamics 2021 Conference* for presentation entitled "ENSO controls on shoreline change in the Pacific".
- **UNSW Scientia Scholar**: research excellence scholarship at UNSW.
- **EPFL Excellence Scholarship**: awarded to graduate students with an outstanding curriculum.