



Covenant University

Raising a new Generation of Leaders

Introducing

PETROLEUM DATA ANALYTICS SPECIAL INTEREST GROUP

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PETROLEUM DATA ANALYTICS SPECIAL INTEREST GROUP
(PDA_SIG)



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About PDA_SIG

-  The People
-  The Vision and Mission
-  The Springboard

Membership

-  Pioneer Members
-  Membership Recruitment
-  Membership Expectations
-  Membership Retention











Terms of Reference

-  Short-term Activities and Timelines
-  Long-term Activities and Timelines

Mentoring


-  Mentors' Roles
-  Confirmed Mentors
-  Proposed Mentors




Platforms and Resources

-  DataCamp
-  WorldQuant University
-  Kaggle
-  Google
-  GitHub
-  Prof. Pyrccz Youtube Channel
-  AI Primer for PDA
-  ML4OG
-  ISLP
-  StatQuest Youtube Channel



The People

 The Petroleum Data Analytics Special Interest Group (PDA_SIG) is made up of Covenant University petroleum engineering **students** with demonstrated **interest** in petroleum engineering applications of:

-  data analytics (DA),
-  machine learning (ML), and
-  artificial intelligence (AI).



The Vision

... towards leveraging on emerging career opportunities in petroleum data analytics, machine learning and artificial intelligence.




The Mission

... to foster **learning**, **upskilling** and **research** in issues of petroleum data analytics



The Springboard

 PDA_SIG is springing off our three-year efforts in exposing CU-PETENG students to Python programming with petroleum engineering applications in a 300L course module – PET328.

 See the PET328 e-portfolios at:

 https://github.com/TTOWG/PET328_2021_Class











 https://github.com/TTOWG/PET328_Class_2022

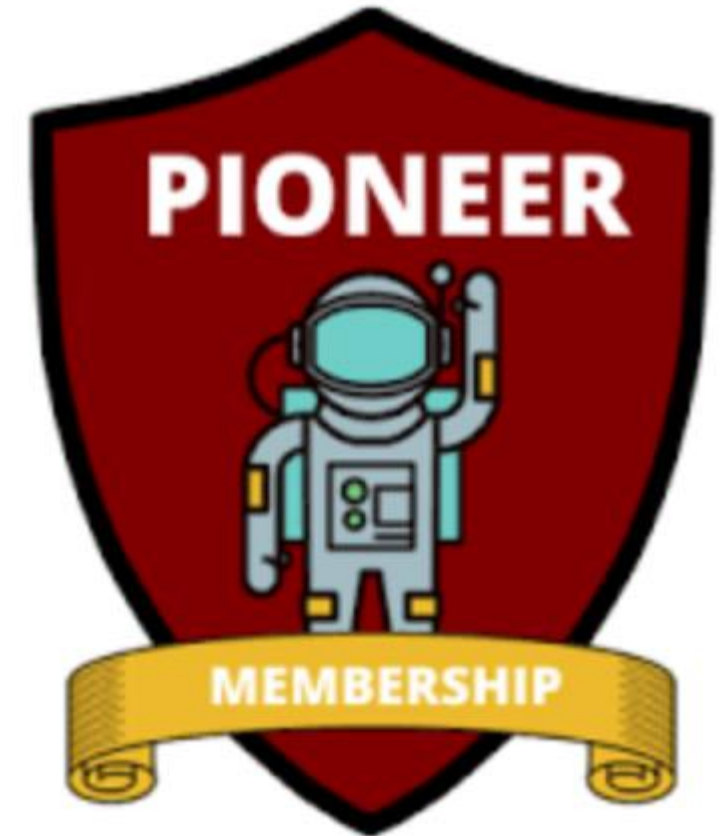
 https://github.com/TTOWG/PET328_Class_2023



Pioneering Members

 The following CU-PETENG students have been selected as pioneering members of PDA_SIG.

-  David Adams
-  Abigail Asuku
-  Daniel Aghanwa
-  John Sosanwo
-  Wonderful Ike
-  Chinomso Ozor-Obi
-  Oluwatenirefunmi Akinbobola
-  Fortune Obialom
-  Mercy Olanrewaju
-  Oladimeji Ajala



Membership Recruitment

 As is the case for the pioneering members, subsequent sets of members shall be recruited based on the following considerations:

-  Activity level on DataCamp learning platform
-  Performance in PET328 assessments
-  Demonstrated interest in data science

 Recruitment would be on a rolling basis.

 That is, at any point in time

 However, targeted recruitment shall take place yearly, at the end of the PET328 offering for that year



```
if you == 'A top performer in the exam':  
    print('See you in PDA Cluster')  
else:  
    print('Bye, for now')
```


Membership Expectation

While membership of PDA_SIG is free, existing members are to consistently meet some performance expectations, stated thus:

Regular attendance of PDA_SIG activities

Training | Project meetings | Seminars | Skill acquisition | Assignments etc

Commitment to learning

Courses | Books | Publications | Multimedia etc.

CAPIC Mindset:

Contributory – play your role

Active – get hands-on




Participatory – be involved

Intentional – be purposeful

Collaborative – team-up

















Sustained Membership

-  Membership of PDA_SIG is only sustained if a member meets expectations.
-  A member deemed to be falling behind expectations shall be placed on a period of probation, with specific personal targets.
-  A member on probation may be asked to vacate PDA_SIG if they fail to deliver on the probation targets.



Short-Term: Activities and Timelines











Learning and Upskilling – till August, 2024

-  In-house short-course on fundamentals of machine learning (December, 2023)
-  Enrolment in and completion of assigned:
 -  DataCamp courses
 -  Applied Data Science Lab at WorldQuant University (August, 2024)
 -  Kaggle courses
-  Invited seminars from practitioners/researchers
-  Reading engagements:
 -  *Machine Learning Guide for Oil and Gas Using Python* (March, 2024)
 -  *Introduction to Statistical Learning with R (ISLR)* (March, 2024)
-  Engagements with Youtube Resources:
 -  StatQuest Channel
 -  GeostatGuy (Prof. Pyrcz) Channel
-  In-house/invited workshop on Python libraries: *numpy*, *matplotlib*, *pandas*, *scipy*, *sklearn*, *seaborn* and *plotly* (March, 2024)
-  Reviews: papers, blogs, Notebooks e.t.c



Long-Term: Activities and Timelines

Research and Innovations – beyond August 2024

-  Project scouting
-  Project proposals presentations
-  Project execution
-  Conferences and journal publications
-  Final-year projects in PDA&ML
-  Pioneers becoming mentors
-  Participation and winning in SPE Student Paper Contests.
-  Providing short-courses tour to SPE student chapters across Nigeria
-  Graduate admission, scholarship and research advisory
-  Research cluster for faculty members



MENTORING

Mentors' Roles

 PDA_SIG is being built to thrive on mentorship.

 Mentors – data science practitioners

 Mentors' roles:

 Motivate on relevance of DA, ML and AI

 Host seminars/talks/workshops

 Identify research issues

 Share experiences

 Provide data for research

 Inform on opportunities: educational, career, scholarships

 Mentor-mentee grooming


 General advisory



Confirmed Mentors

 Karen Nwosu – Cummins Inc.

 Deborah Alenkhe - BRP

 Nhoyidi Nsan – Imperial College



Proposed Mentors


 Michael Aku – CypherCrescent

 Zainab Titus – Imperial College

 Opeyemi Oludara – Imperial College



DataCamp

 Through the PET328 course, we secured 90 units of free license to DataCamp Classroom offer – giving full access to over 400 data science online courses.

 Members of PDA_SIG will be added to the license.

 <https://www.datacamp.com>



WorldQuant University

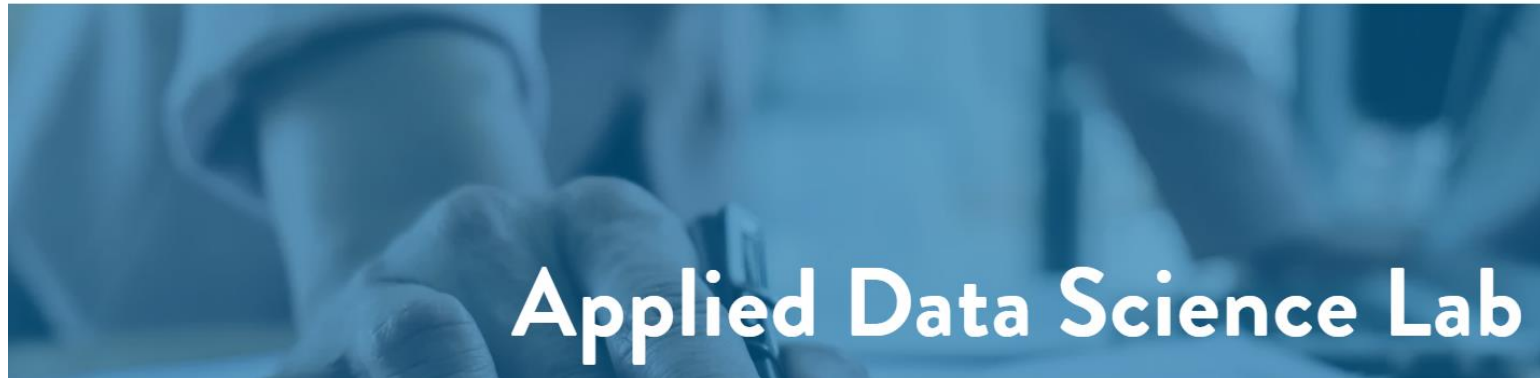
 <https://www.wqu.edu/programs/applied-ds-lab/>



+ OUR OFFERINGS

FAQ

ABOUT



Kaggle

 <https://www.kaggle.com/>

kaggle

Competitions

Datasets

Models

Code

Discussions

Courses

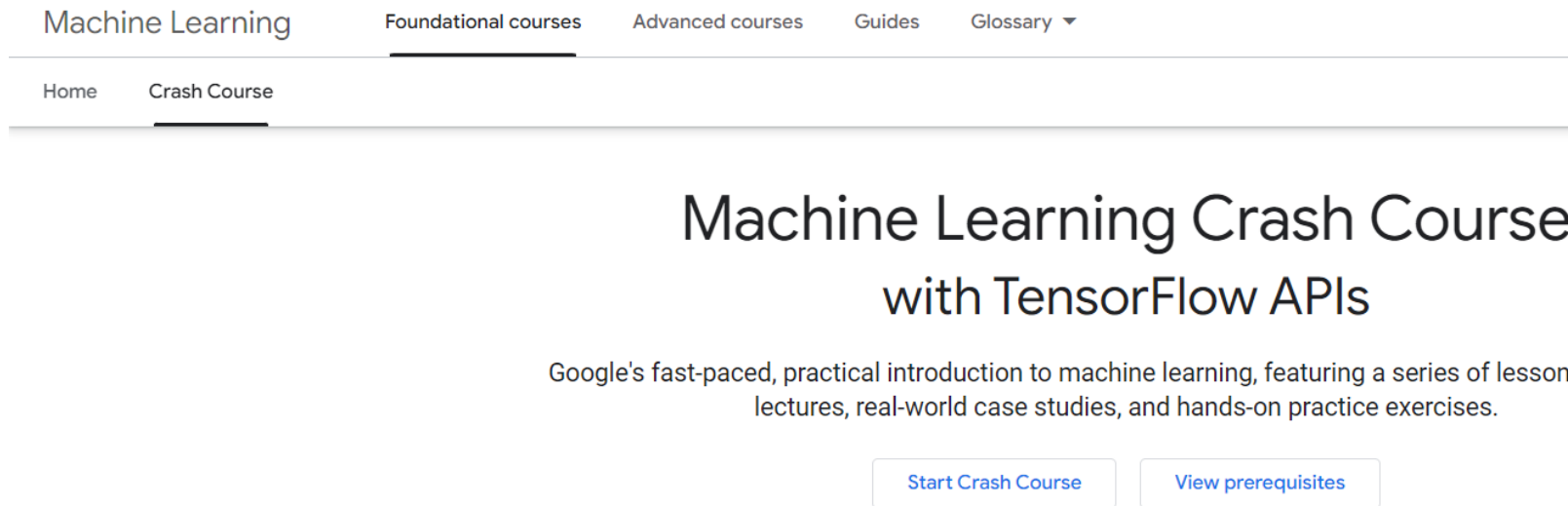
Level up with the largest AI & ML community

Join over 16M+ machine learners to share, stress test, and stay up-to-date on all the latest ML techniques and

PLATFORMS AND RESOURCES

Google Developer Machine Learning Course

 <https://developers.google.com/machine-learning/crash-course>



The screenshot shows the Google Developer Machine Learning Crash Course page. At the top, there is a navigation bar with links for 'Machine Learning', 'Foundational courses', 'Advanced courses', 'Guides', and 'Glossary'. Below this is a sub-navigation bar with 'Home' and 'Crash Course'. The main heading is 'Machine Learning Crash Course with TensorFlow APIs'. Below the heading is a description: 'Google's fast-paced, practical introduction to machine learning, featuring a series of lessons lectures, real-world case studies, and hands-on practice exercises.' At the bottom, there are two buttons: 'Start Crash Course' and 'View prerequisites'.

Machine Learning Foundational courses Advanced courses Guides Glossary ▼

Home Crash Course

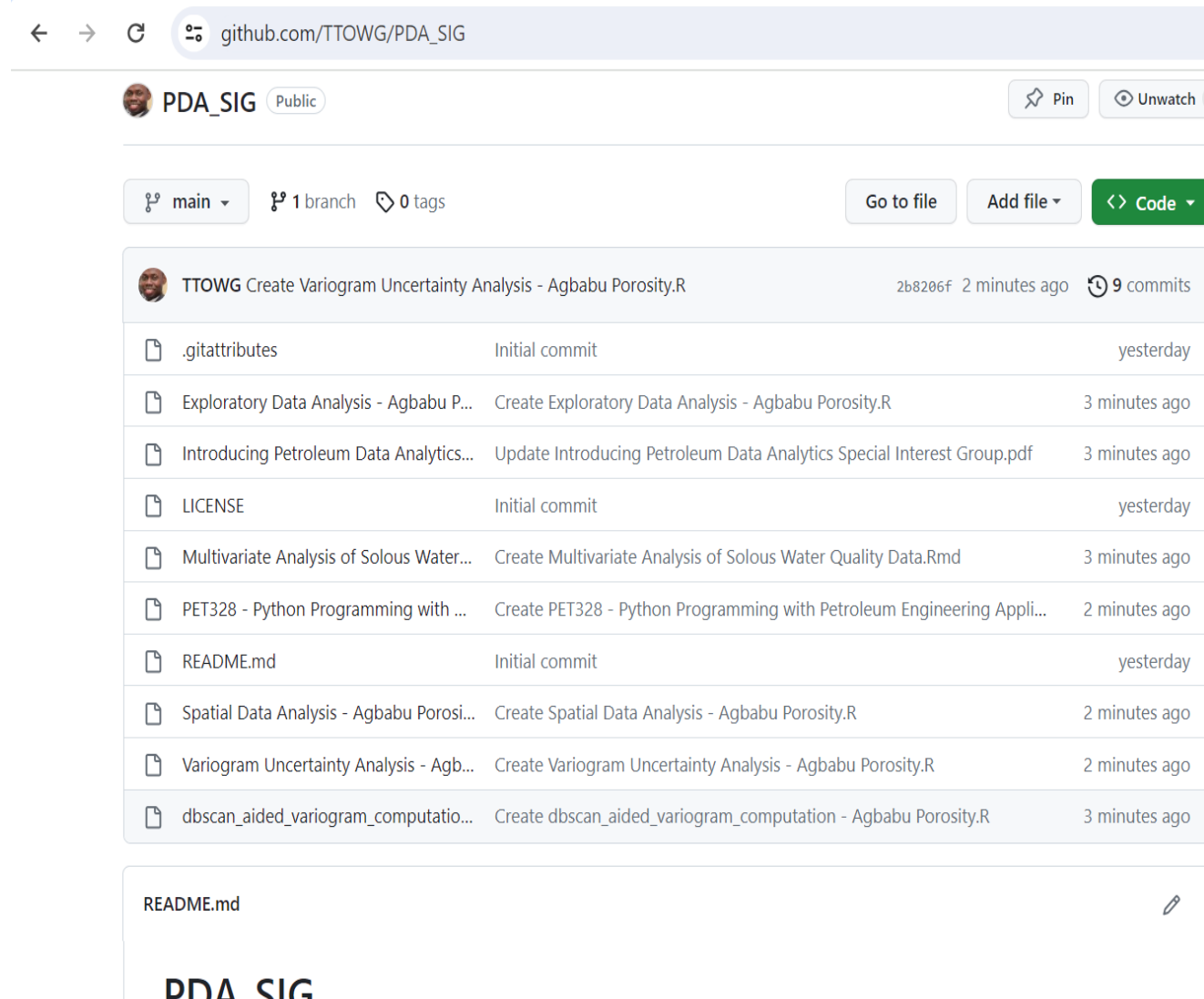
Machine Learning Crash Course with TensorFlow APIs

Google's fast-paced, practical introduction to machine learning, featuring a series of lessons lectures, real-world case studies, and hands-on practice exercises.

[Start Crash Course](#) [View prerequisites](#)

GitHub

- Collaborations between PDA_SIG members and mentors would happen via GitHub.
- A GitHub repository has been created for PDA_SIG:
https://github.com/TTOWG/PDA_SIG



← → ↺ github.com/TTOWG/PDA_SIG

PDA_SIG Public Pin Unwatch

main 1 branch 0 tags Go to file Add file <> Code

TTOWG Create Variogram Uncertainty Analysis - Agbabu Porosity.R 2b8206f 2 minutes ago 9 commits

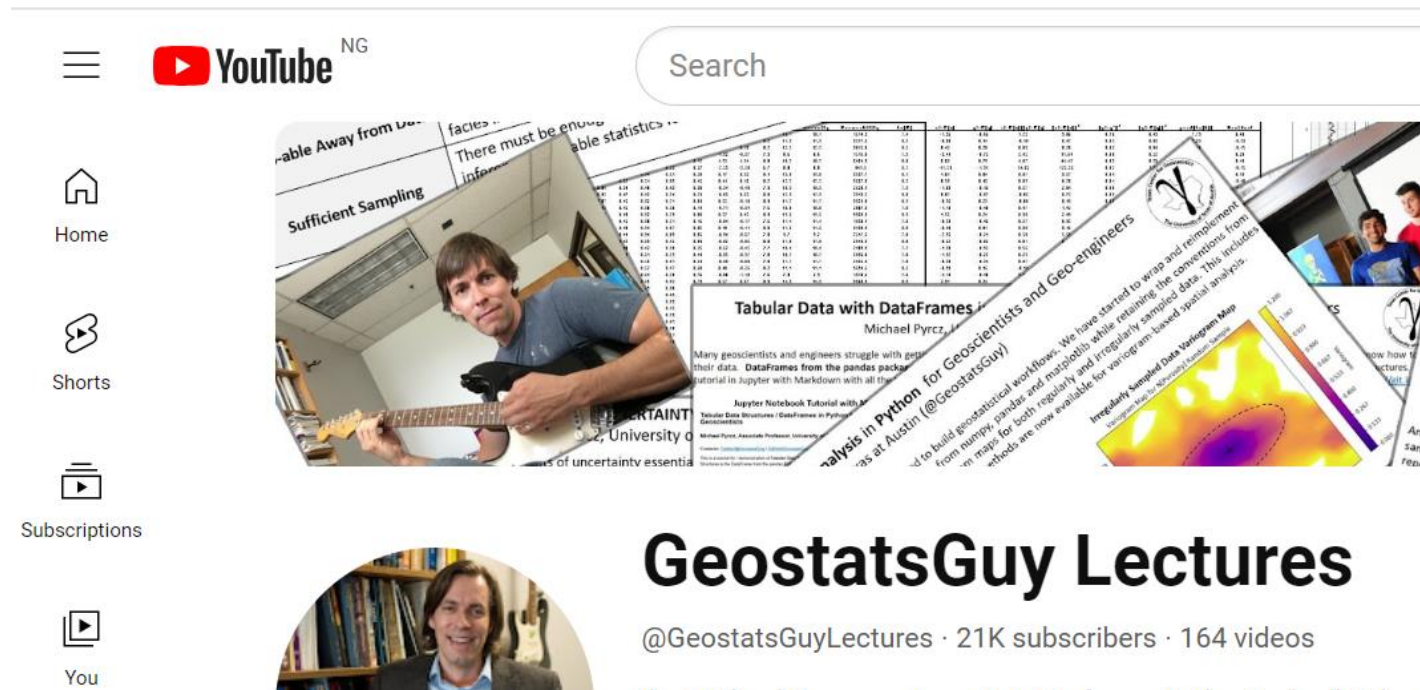
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Exploratory Data Analysis - Agbabu P...	Create Exploratory Data Analysis - Agbabu Porosity.R	3 minutes ago
Introducing Petroleum Data Analytics...	Update Introducing Petroleum Data Analytics Special Interest Group.pdf	3 minutes ago
LICENSE	Initial commit	yesterday
Multivariate Analysis of Solous Water...	Create Multivariate Analysis of Solous Water Quality Data.Rmd	3 minutes ago
PET328 - Python Programming with ...	Create PET328 - Python Programming with Petroleum Engineering Appli...	2 minutes ago
README.md	Initial commit	yesterday
Spatial Data Analysis - Agbabu Porosi...	Create Spatial Data Analysis - Agbabu Porosity.R	2 minutes ago
Variogram Uncertainty Analysis - Agb...	Create Variogram Uncertainty Analysis - Agbabu Porosity.R	2 minutes ago
dbscan_aided_variogram_computatio...	Create dbscan_aided_variogram_computation - Agbabu Porosity.R	3 minutes ago

README.md

PDA SIG


GeostatGuy Youtube Channel

 <https://www.youtube.com/@GeostatsGuyLectures>

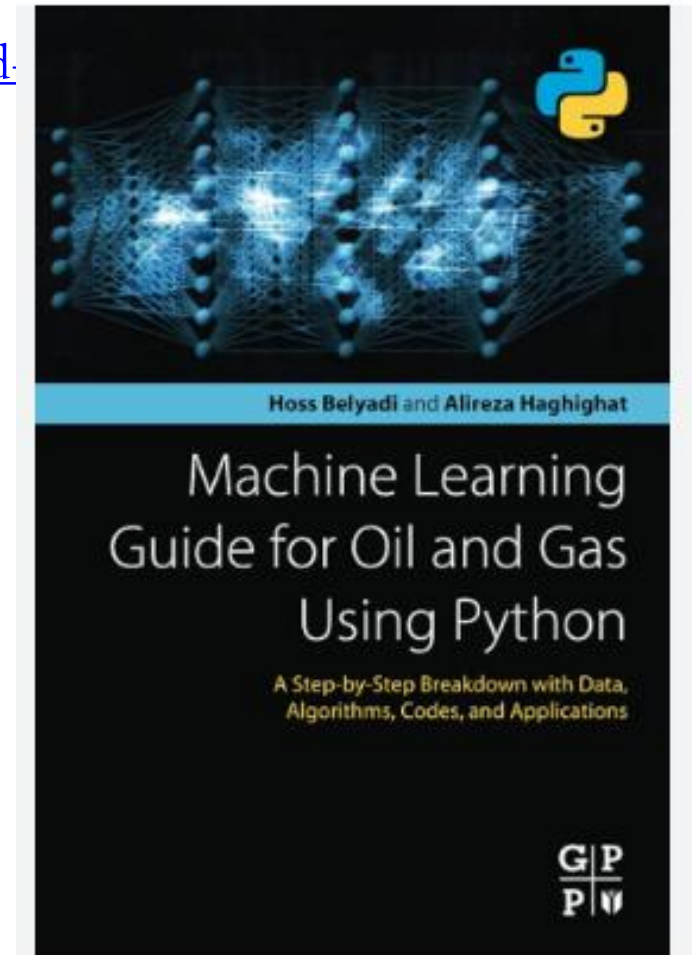


PLATFORMS AND RESOURCES

Machine Learning for Oil and Gas using Python

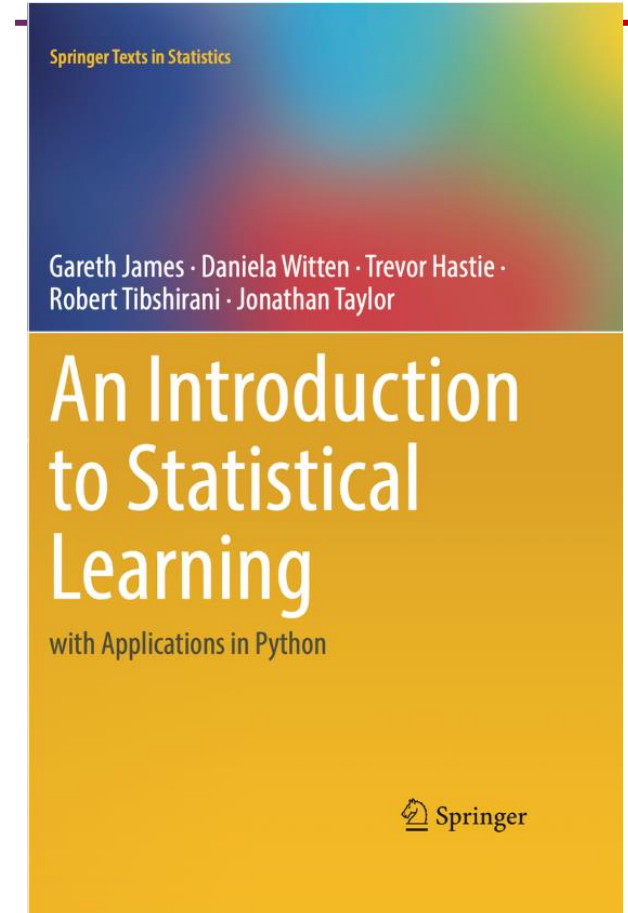
 <https://shop.elsevier.com/books/machine-learning-guide-for-oil-and-gas-using-python/belyadi/978-0-12-821929-4>

 Accompanying website contains Jupyter Notebooks and data.



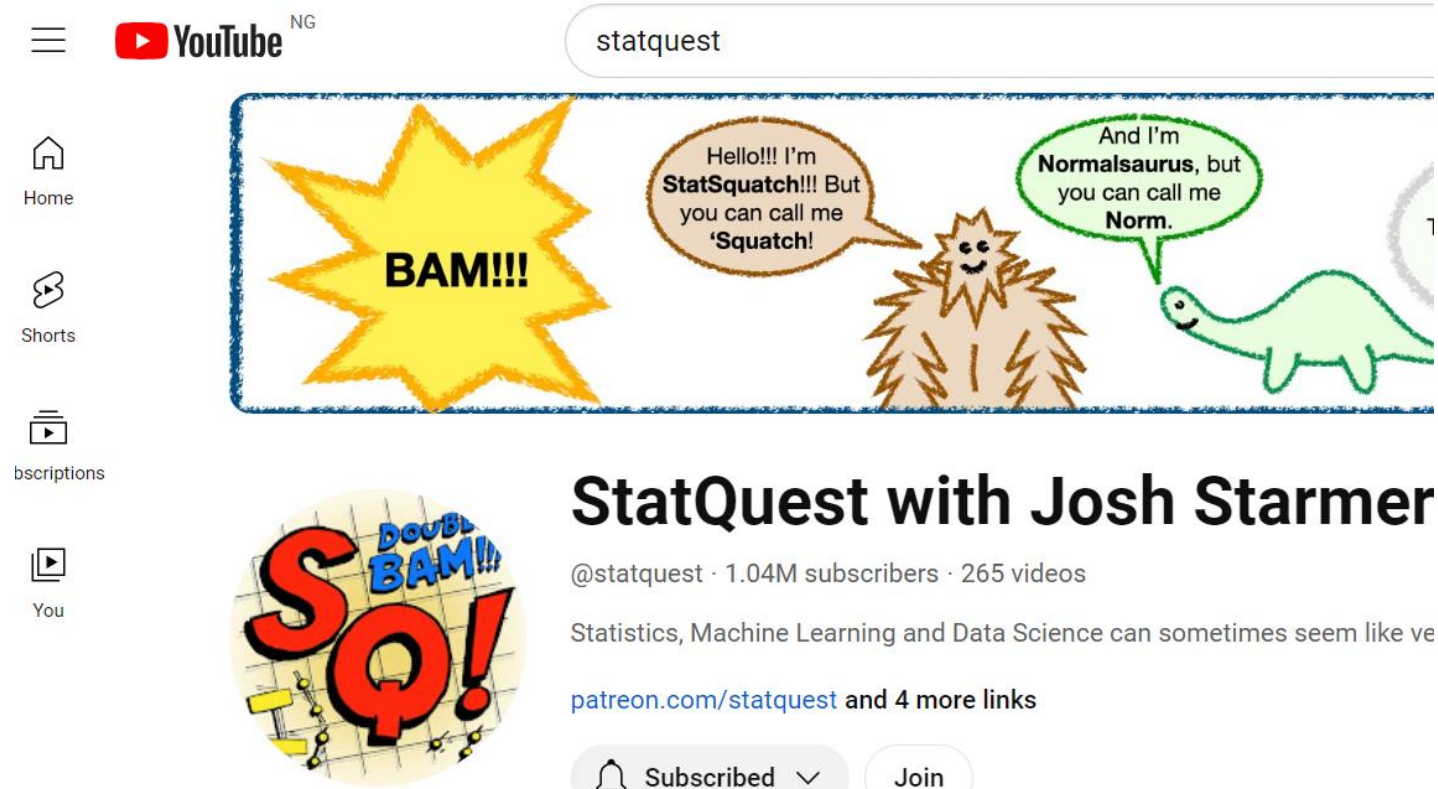
Introduction to Statistical Learning with Python

 https://hastie.su.domains/ISLP/ISLP_website.pdf.download.html



StatQuest Youtube Channel

 <https://www.youtube.com/@statquest>





thank
you