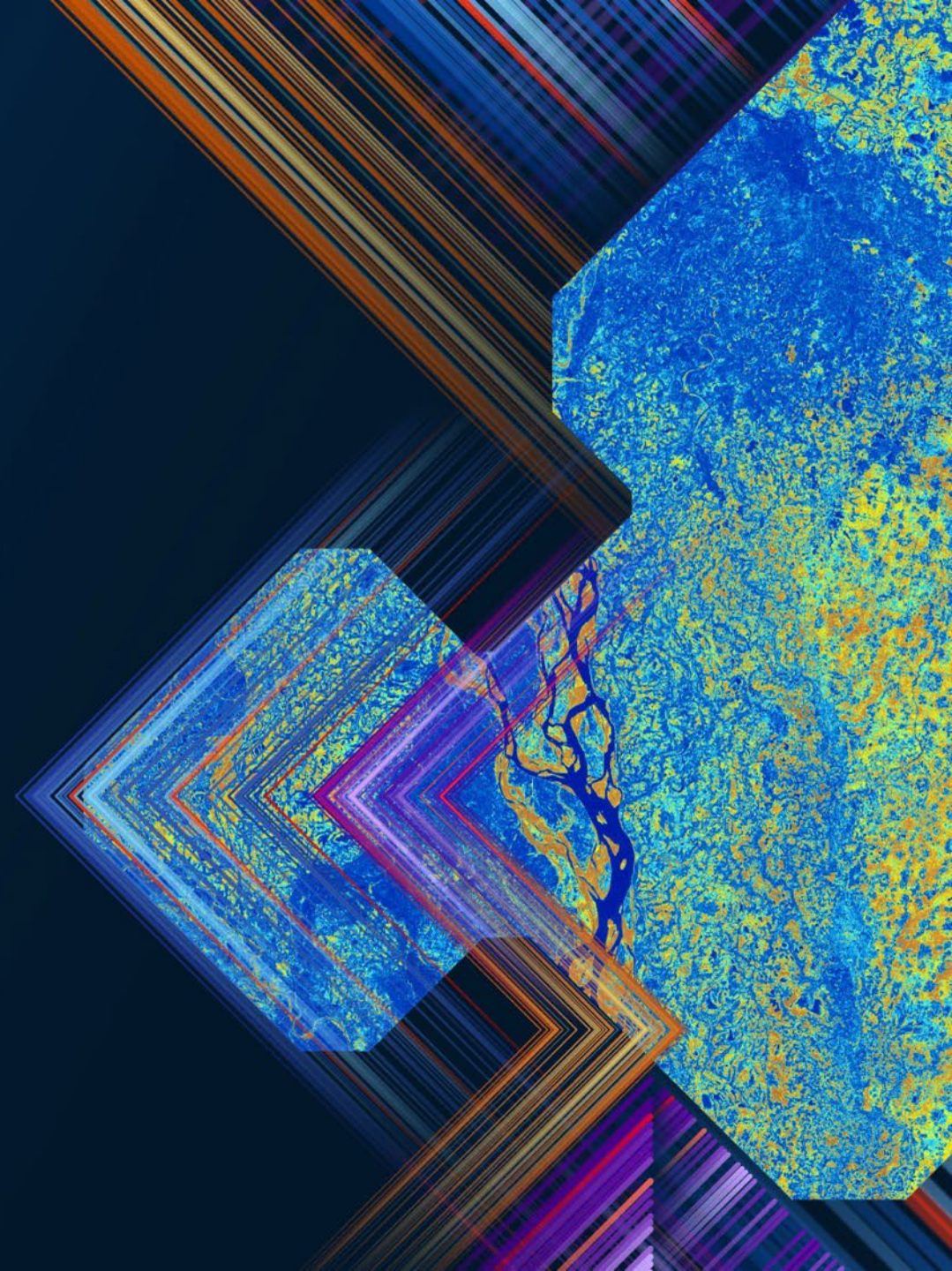


Spatial Analysis & Data Science

David Barkhuisen

Liezel Botha

Tendai Dupwa



Topics

- Spatial analytics **workflow**
- Hot takes (**Kahoot**)
- **Demos**

Spatial analytics workflow

- Built for end-to-end **analysis**



Data
Engineering



Visualisation
& Exploration



Spatial
Analysis



Modeling
& Scripting



Sharing &
Collaboration

Data Engineering

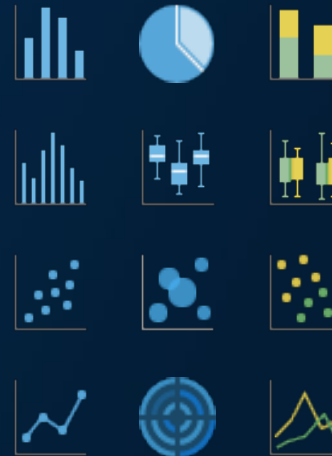
- 80% of analysis is getting **data ready** for analysis
 - What's **missing**
 - What's **wrong**
 - What **can** you **add**
 - What **should** you **transform**

Data Engineering

The Fun Stuff

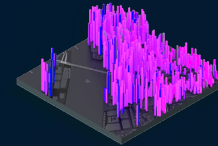
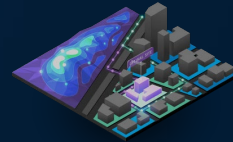
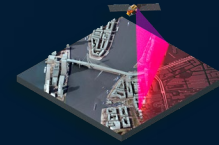
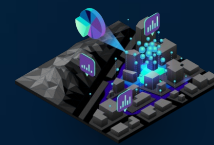
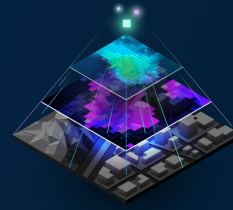
Visualisation & Exploration

- Making **sense** of your data
 - Compare categories & amounts
 - Visualise distributions & frequency
 - Explore relationships & correlations
 - Visualize change over time & distance



Spatial Analysis

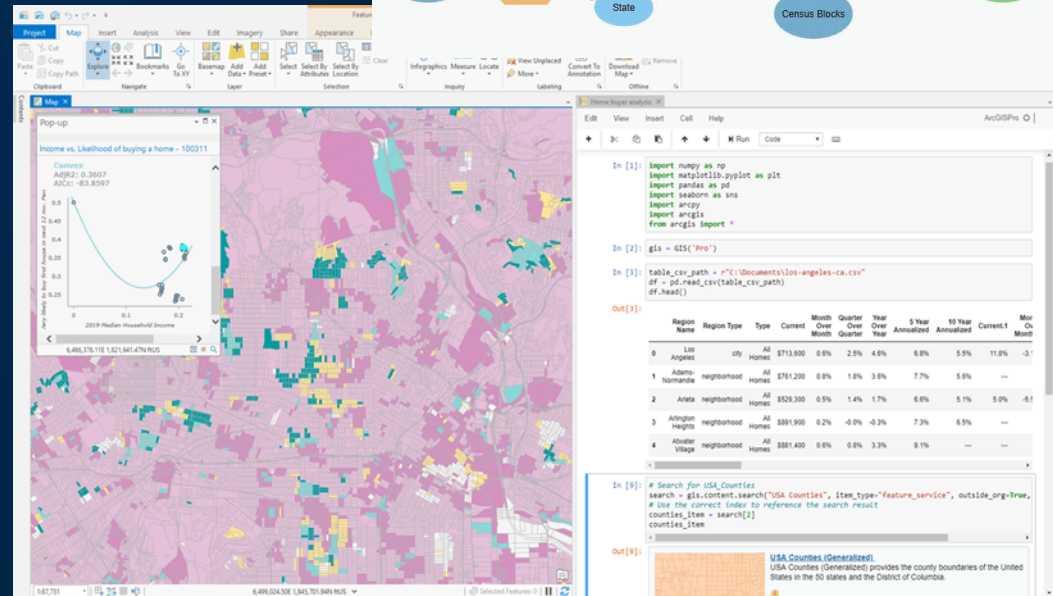
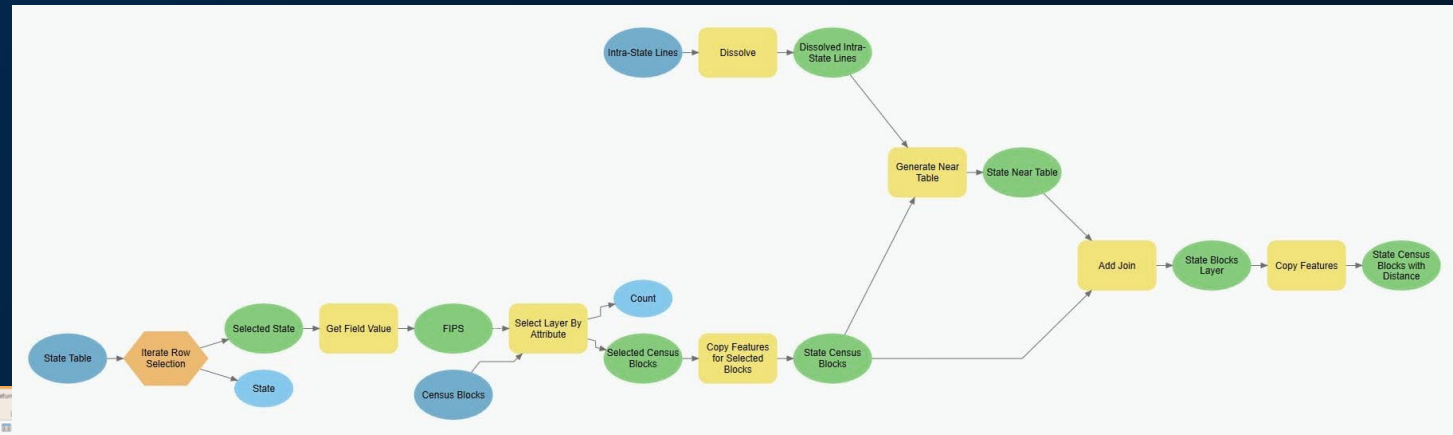
- Focusing on **questions**
 - **Damaged** buildings post disaster
 - **Clusters** of new flu cases
 - Competitors within **5-minute drive** of my store
 - Best **locations** to build a school
 - Patterns **changed** over time
 - Forest **loss** has occurred



Modeling & Scripting

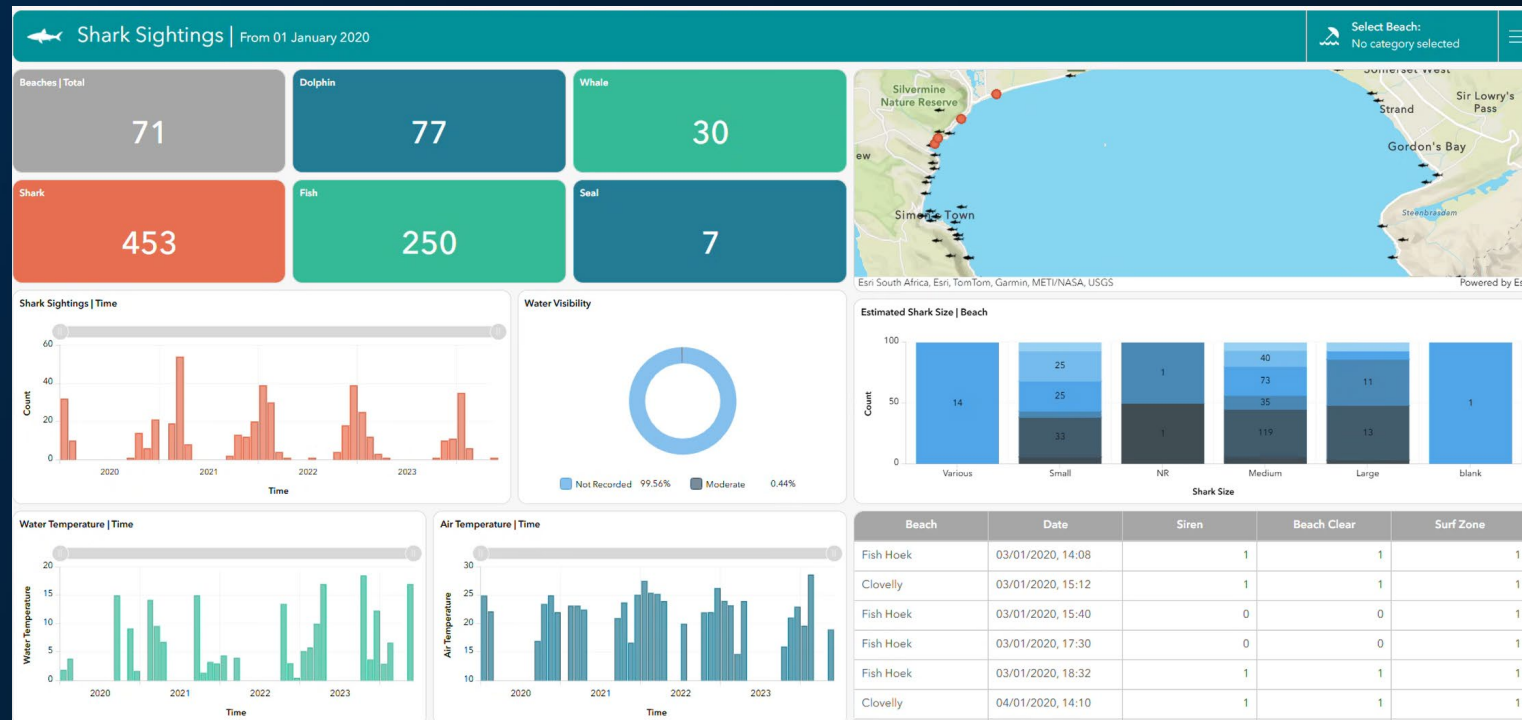
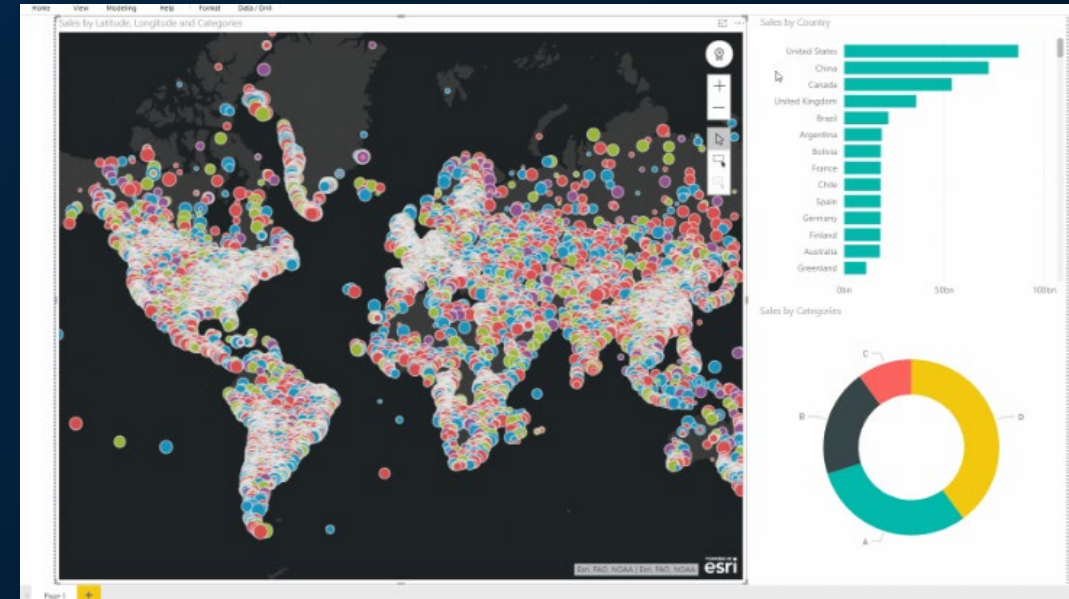
- Comprehensive capabilities for **automating, modeling & scripting** your workflows

- Model Builder
- Notebooks
- Python
- Conda environments



Sharing & Collaboration

- Making science **actionable**
- **Know** your audience
 - Other analysts / data **scientist**
 - Decision makers
 - Public
 - Education



The background is a solid dark blue. In the top-left and bottom-right corners, there are decorative geometric patterns consisting of multiple overlapping, nested lines in shades of blue, orange, and white, forming a stylized 'X' or arrow-like shape pointing towards the center.

QR Code | Hot take

Hot take 1

- Spatial analysis is just **fancy** buffering
 - How **dare** you
 - Not **entirely** wrong
 - I prefer **smooth** buffering
 - It is a **science**, thank you

Hot take 2

- Organisation silos are the greatest barrier to integrating **spatial** & data science
 - Agree **100%**
 - Net so **bietjie**
 - Sounds like another **Teams** meeting
 - We are **city** people, no silos here

Hot take 3

- I have fixed **more** problems with a **field calculator** than with therapy
 - Same
 - Therapy still **wins**
 - Field calculator **to the rescue**
 - I clean my data like it's **personal**

Hot take 4

- Most analysis workflows are built around **tools we know**, not **questions we should ask**
 - Sadly **true**
 - Mindset is **shifting**
 - **Training** helps
 - I always **start** with the question

Hot take 5

- If your audience does not understand your map, **it is their fault**
 - Install a new **version** of the audience
 - Nope, it is **on the analyst**
 - Communication is a **shared responsibility**
 - **Time** to make a **dashboard**



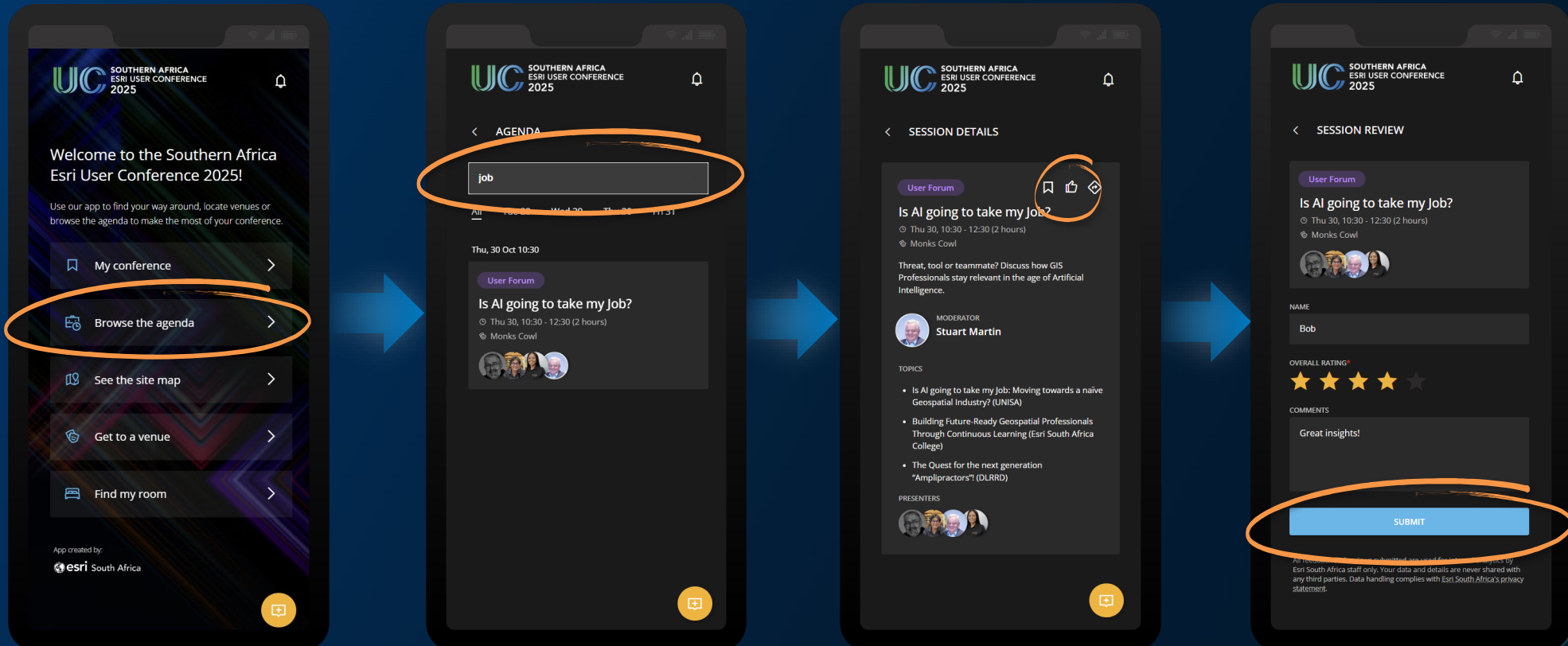
Demo

Spatial analysts are **NOT** losing relevance...

... we are **GAINING** responsibility



Please share your feedback in the UC app





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2025**