Drilling optimization for oil and gas wells

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Agenda

1. Industry context
2. Our process with you
3. A data driven example
4. Your next steps

Industry Context

Who we generally work with and why

Persona	Field Ops	Maths Skills	Pain	Power
Rig operator	Expert drillers	Not so good at math	Time on rig is cost	End user
Planners	Knowledge of process	Pretty good, maybe background with MATLAB	Needs field drilled ASAP	Can allocate work
Management	Separate from process	Not needed: focus on accounting	Shareholder accountability	Allocates budget

Persona interactions

- Driller
  - Needs work contract
  - Wants to go fast to get contract
- Planner
  - Can allocate work
  - Needs to complete field
  - Needs project approval – e.g. Machine Learning & Analytics
- Manager
  - Needs field(s) done

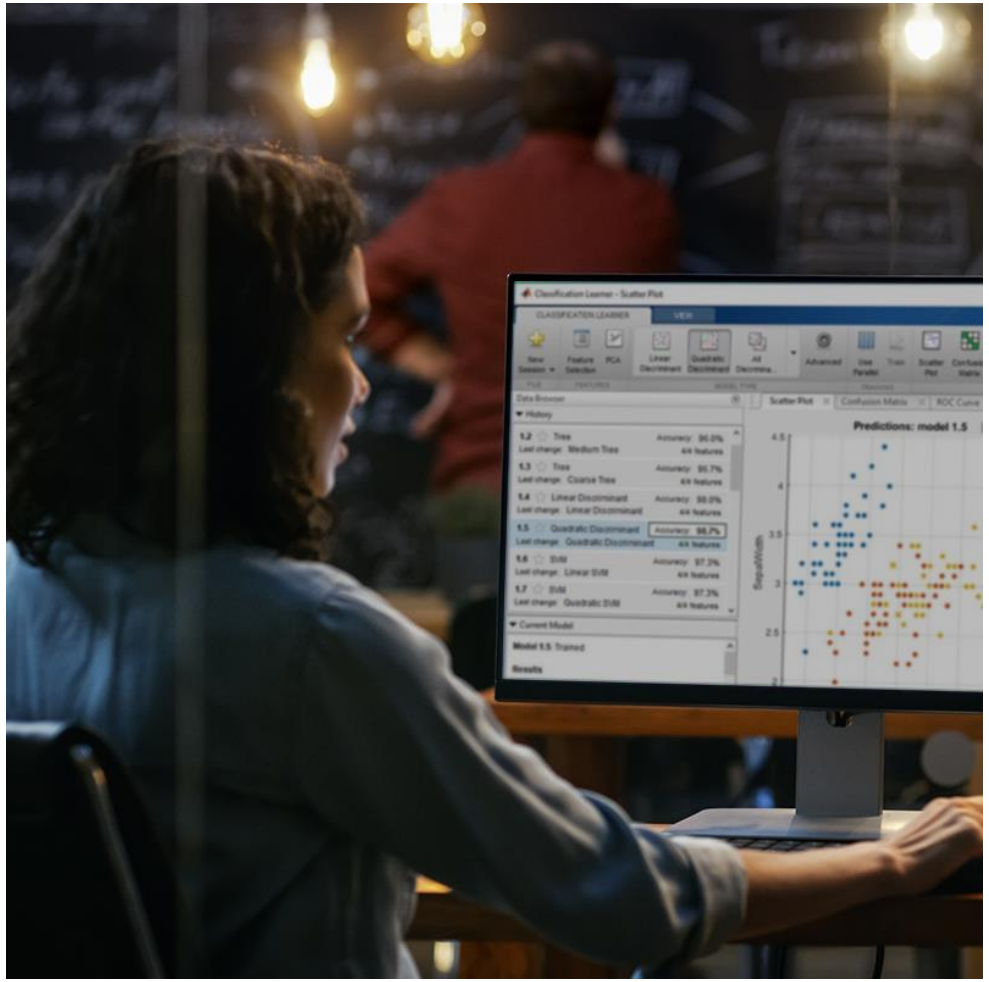
COLLABORATION

Or

Its all about people!

Where we normally become involved

“I need to maximise the drilling across my field. I’ve seen a lot of discussion of machine learning but how to get started”

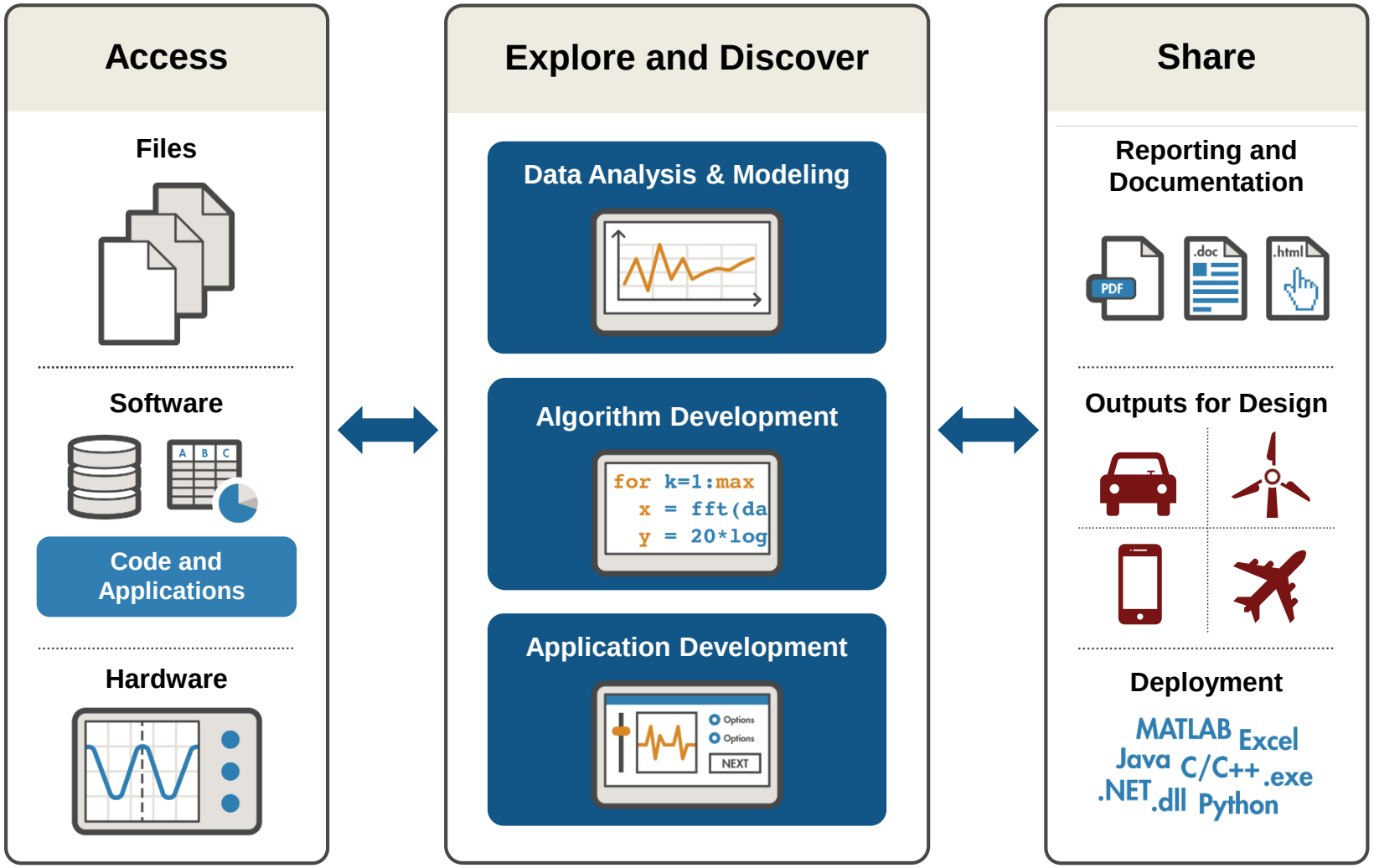


Our Guiding Process

How we work with you

1. Collaboration
2. Leverage the Technical Computing Workflow
3. Enable your project ownership
4. Empower you for the future

Technical Computing Workflow

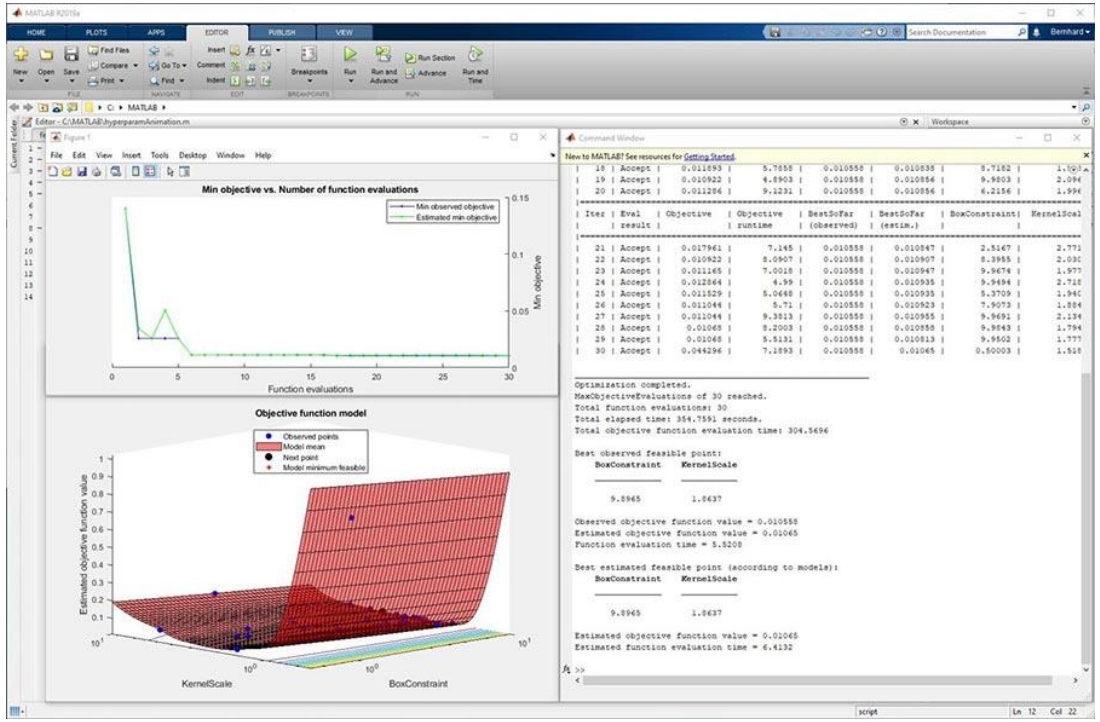


Lets do this live in MATLAB

Your Next Steps

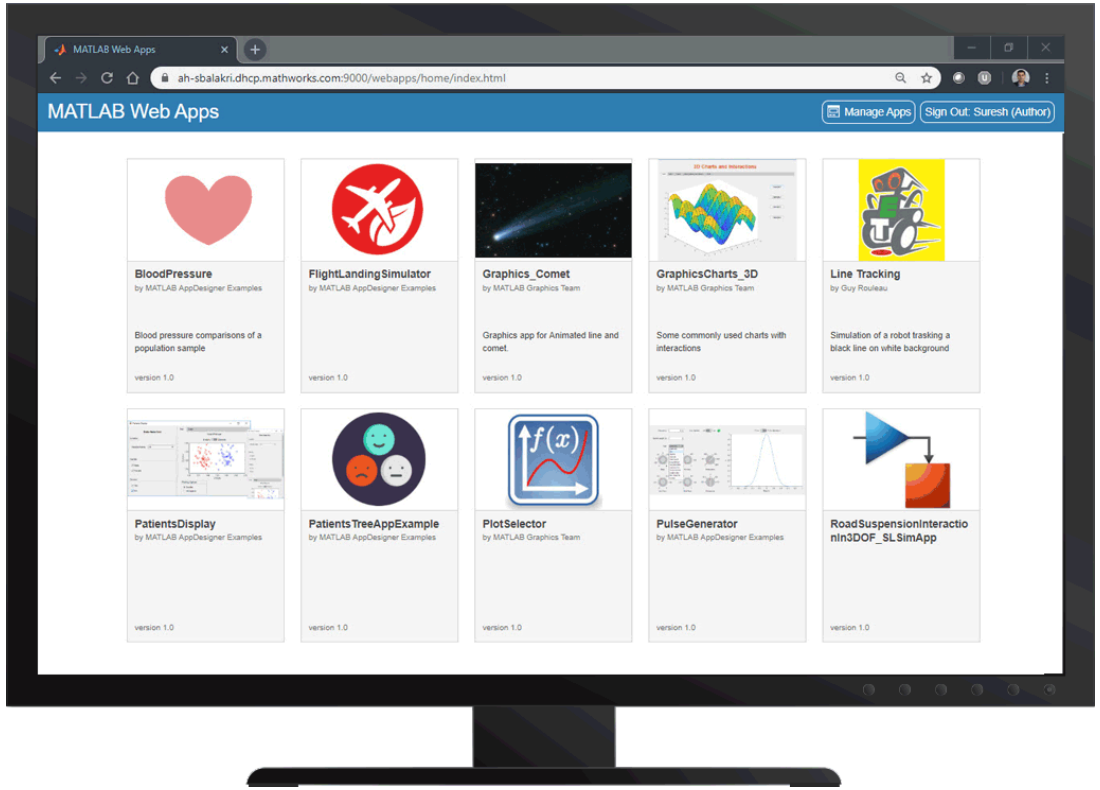
Add Extended Data Sets

- Add extended data to include
  - Dynamics
  - Vibration
  - Higher frequency sampling
- Value add for you
  - Move to machine learning
  - Deploy expert systems to the edge



Deploy to Edge Systems

- Graphical Apps on Embedded Systems
- Apps included in core MATLAB
- Designed by planners
- One click compile
- Deploy to hardened devices on rig for operator use in the field



Conclusion

1. Its all about people
2. Start with quick wins in analytics
3. Look to advance with
    1. Machine Learning
    2. Deployment

4. How can you benefit:
    1. Download a trial to try yourself
    2. Contact us for more information