intergence

Change IT. Simplify IT. Value IT.

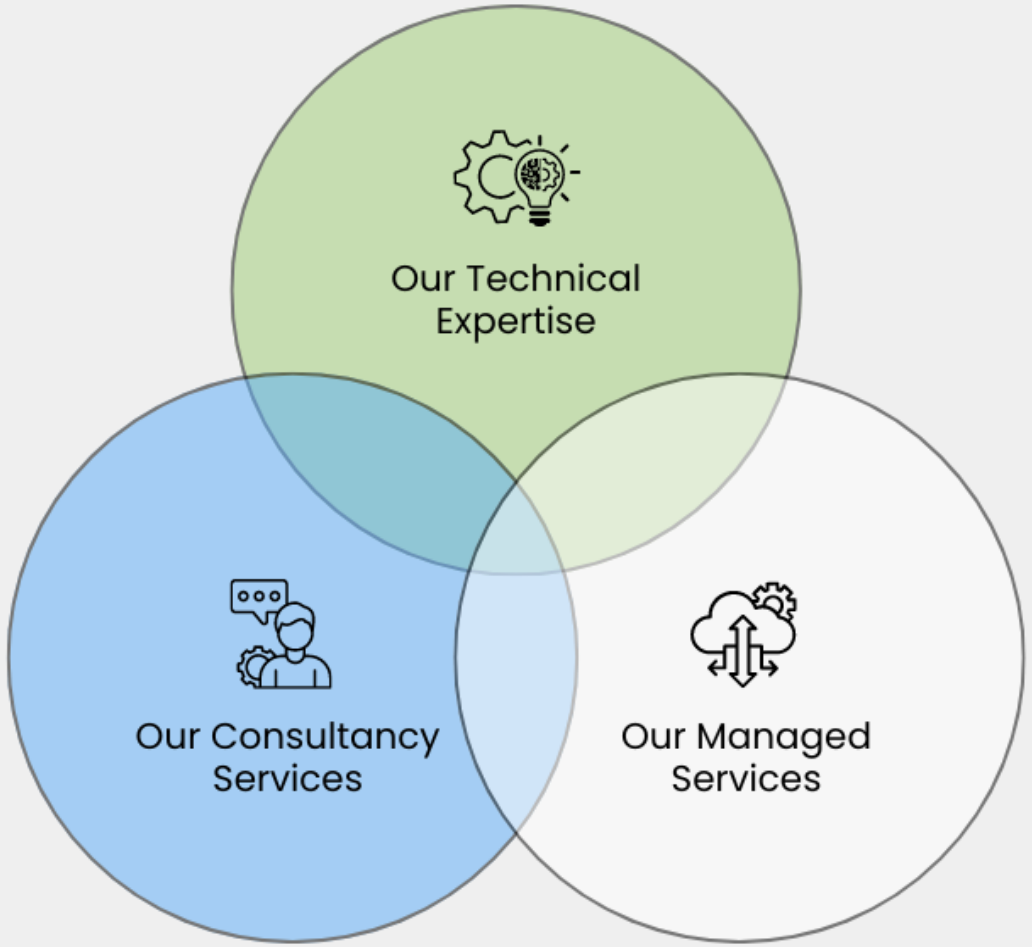
Training AI/Machine Learning Models for Predictive Analytics.

Anthony Osborn

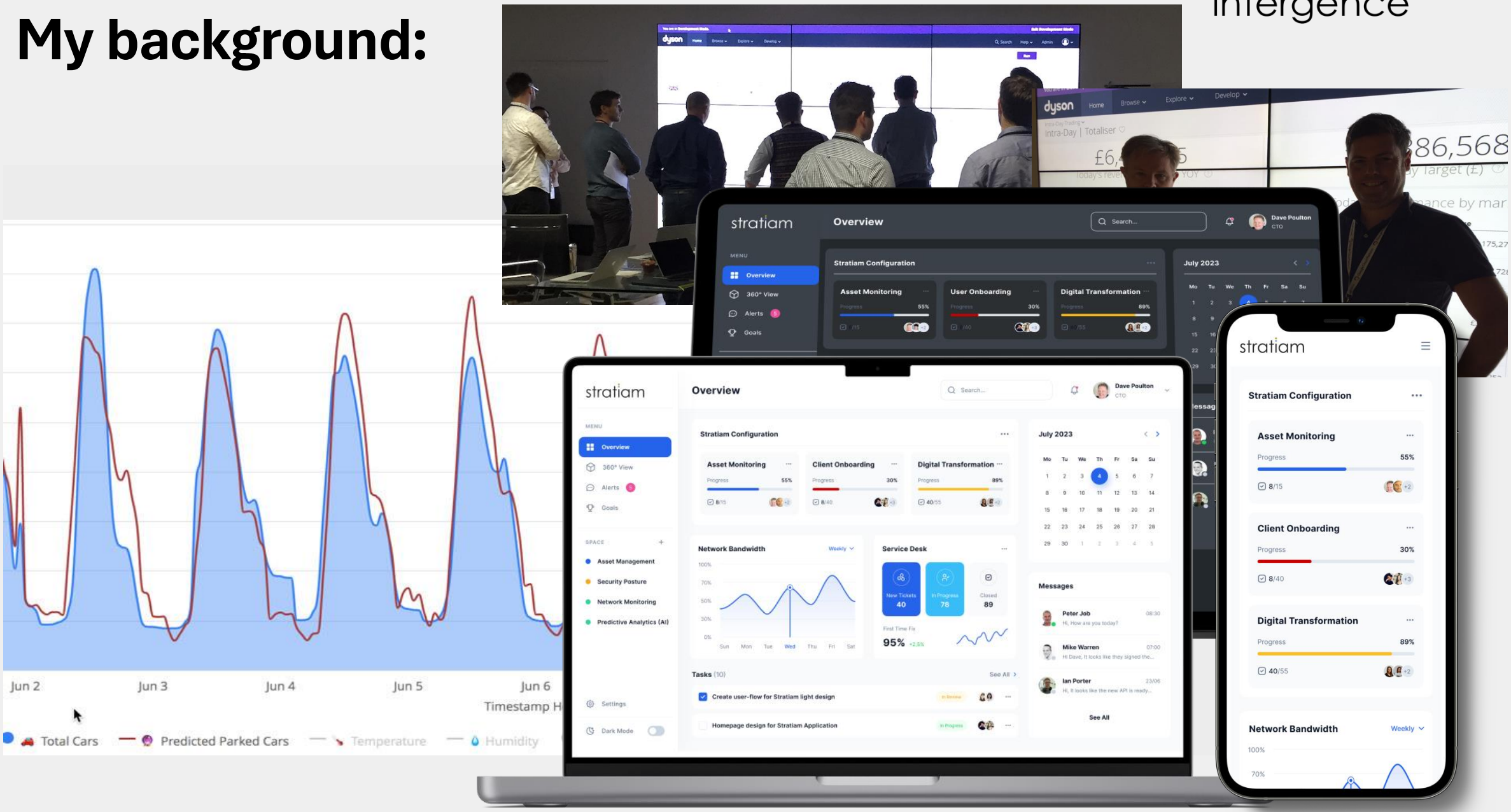
About Intergence:

Founded in 2003, Intergence is a leading technology consultancy and IT-managed services provider, dedicated to solving complex digital and operational challenges. Our innovative, outcome-based solutions empower businesses to achieve their goals and drive operational excellence.

Headquartered in Cambridge, UK, we serve a global client base across various industries, delivering measurable results and build upon long-term partnerships.



My background:

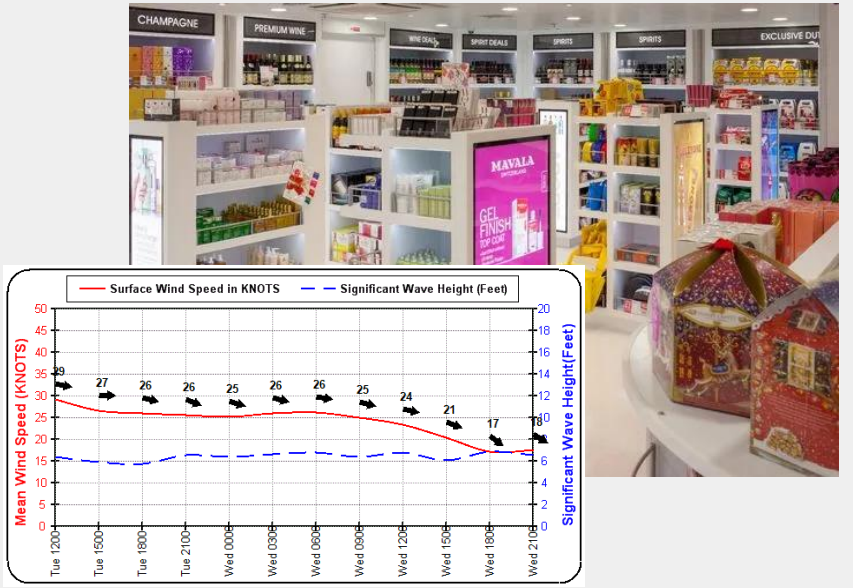


ML/Predictive Analytics as a subset of AI's tree:

- **AI**
  - **ML**
    - **Predictive Analytics**
    - Classification
    - Clustering
    - Reinforcement learning
    - Deep Learning
  - Natural Language
  - Generative AI
  - Computer Vision
  - Robotics
  - Etc...

Predicting the unpredictable:

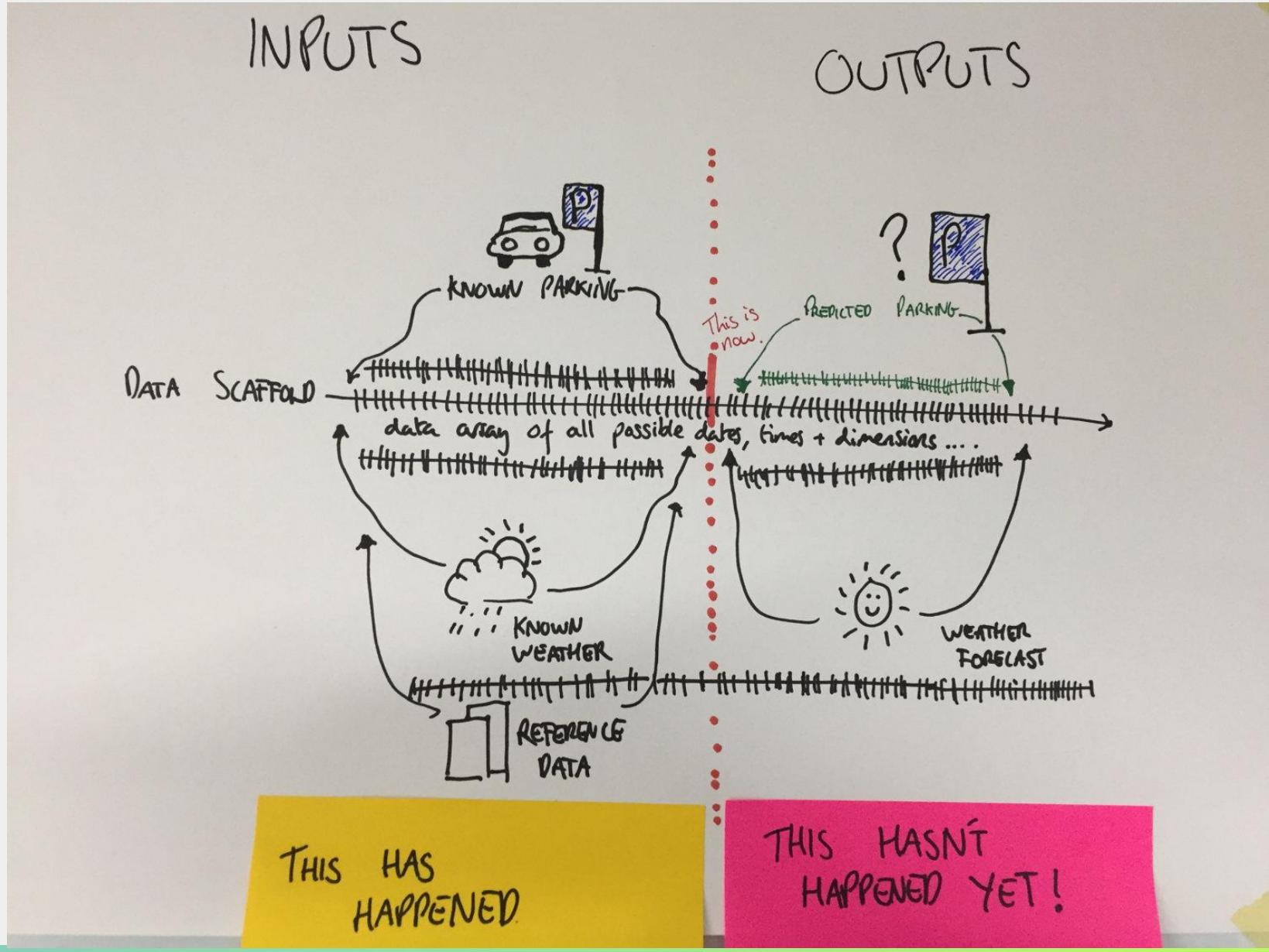
- IOT (air quality) devices assisting LA fire-firefighters to locate fire-source location (**dyson**)
- Heatwave data <=> advertising spend & corresponding fan sales (**dyson**)
- Wave height <=> onboard product sales (**Intergence / well-known ferry operator**)
- Parked cars in Cambridge (**Intergence**)
- IT Infrastructure Metrics [Service Desk Tickets, CPU, Network Bandwidth etc] (**Intergence / various clients**)



Rules for setting up ML / Predictive Analytics on your data (The 3 min version!)

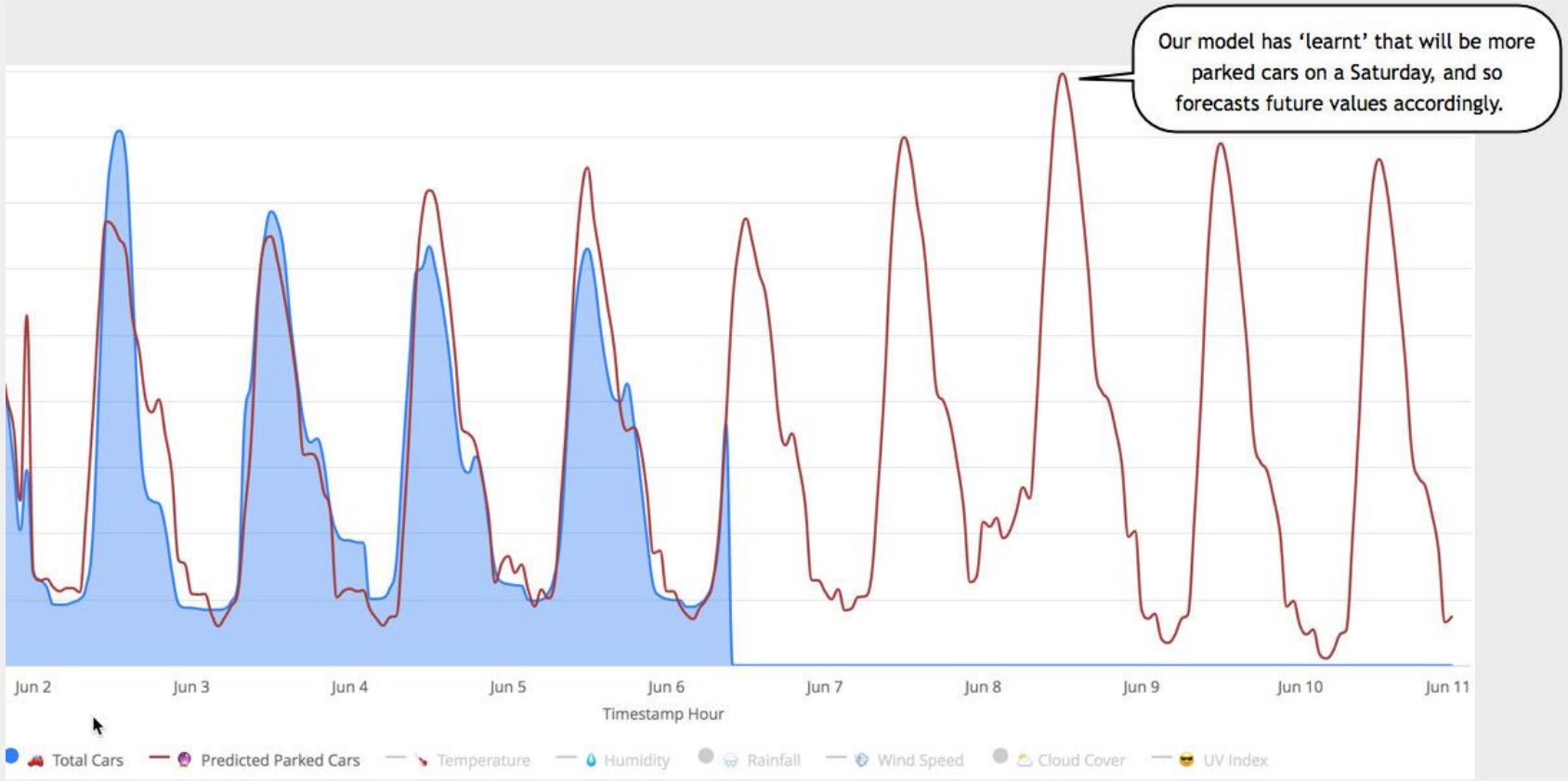
- **Start with a hypothesis**
- Clean/prep your data
- Build a data-scaffold
- Choose the right model
- Train your model
- Evaluate your model
- Refine your model

*all the above steps are ‘human’ activities. **AI isn’t that good yet!**



On curated datasets ~90% prediction accuracy is possible:

- Example shows predictive analytics model for ‘parked cars in Cambridge’.
- Red line show predicted parked cars – blue area shows actual volumes.
- 90%+ accuracy (predicted vs actual) possible [on 48hr forward forecast].
- Predictors included calendar events, time partitions, traffic and weather data.
- Data model made possible via our expertise with data AND ability to connect to source data / APIs



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