Earth Observation & AI

at Satellite Applications Catapult

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We work with
Innovate UK
Our Mission

// To innovate for a better world, empowered by satellites.
WE HELP ORGANISATIONS GROW THEIR BUSINESS.

We help organisations to use satellite applications to grow their business in the UK and internationally.

WE ARE INDEPENDENT.

We bring together industry, researchers, end-users and government to explore and develop new ideas.

WE ARE GOVERNMENT BACKED.

We are partly-funded by the Government and work closely with Innovate UK, UK Space Agency, UK Science & Innovation Network, and other public bodies.

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SATELLITE APPLICATIONS CATAPULT

Who are we

We are a not-for-profit innovation and technology company transforming the way the world uses satellite technology and data.
OUR APPROACH

We do 3 things

Across Global Markets

Across key Technologies

ENERGISE

EMPOWER

ENABLE

INTELLIGENT TRANSPORT
BLUE ECONOMY
SUSTAINABLE LIVING
GOVERNMENT SERVICES

SMALLSAT CONSTELLATIONS
MOBILE COMMUNICATIONS
AUTONOMOUS SYSTEMS
GEOSPATIAL SYSTEMS
WE WERE SET-UP 5 YEARS AGO

Our impact

- Met 3500 organisations
- Engaged with 427 SMEs
- Delivered over 200 externally funded projects
- Worked in 22 countries
- Built relationships with 118 universities
- Including 66 university departments
- Invested £19.7m in world-class facilities
WHAT SIZE IS THE MARKET?

15 $Bn p.a. market by 2025
Major VC Investments in Space (since 2000)

18 $Bn Total financing
6.5$Bn Venture Capital
60% last 3 years
Industry Challenges

Flood of Data

Labour intensive Processes

Opportunity: “To accelerate the transformation of the Earth Observation industry through the adoption of Artificial Intelligence technologies.”
CATAPULT’S PROGRAMME OF WORK – AI FOR EO

4 Key Activities

RAISE AWARENESS
- Conferences
- Competitions
- Case-studies

BUILD ECOSYSTEM
- User challenges
- AI capabilities
- EO capabilities

SHARE TOOLSET
- Platforms
- Open-source
- Data sources

TRIGGER FUNDING
- Commercial R&D
- Public grants
- Start-ups funding

Key blocker
Training Data
MARKET-LED USE-CASES

Challenges relevant to AI

- **AgriTech**
  Growth Disease, Logistics, Intelligence/Compliance

- **BlueEconomy**
  Coastal Monitoring, Smart Ports, Maritime Domain

- **Extractive Ind.**
  Tailing Dams, Environmental impact, Illegal mining

- **Intel. Transp.**
  Autonomous vehicles, Traffic management

- **Governments**
  Urban development, Disaster management

Nature of technical challenges – % relevant

- **Forecasting** 44%
- **Prob Class** 69%
- **Change Detection** 31%
- **Detection** 47%
- **Extraction** 56%

Business improvement opportunity – % relevant

- **Provenance** 80%
- **Precision** 70%
- **Accuracy** 80%
- **Latency** 60%
Classification of building types for land-use planning in developing countries.

Global monitoring of PV farms deployments to model commodities demand.

Damage assessment of infrastructures to steer relieve effort post-disaster.

Detection of household reservoirs as indicators of narcotics production sites.

Kenya

USA

Dominica

South Afghanistan
Assessment of infrastructures damages to steer relief effort post-disaster.
TRAINING DATASET – 150,000 LABELS – 8,000 MULTI-ANNOTATORS

BUILDINGS

ROADS

BUILDING DAMAGE

ROAD DAMAGE

COMPUTER VISION INFRINGEMENT - LABELLERS RELIABILITY RANKING
DELIVERING AN EXPLOITATION STRATEGY

Other legacy activities

RAISE AWARENESS
BUILD ECOSYSTEM
SHARE TOOLSET
TRIGGER FUNDING

ENGAGE’18 conference
FDL’18 AI accelerator
Oxford AIMS Doctoral Training

RiRs Researchers in Residence
Cooperations international scene

Intuitive Data Access Data Discovery Portal
WHAT’S NEXT?

AI4Space activities

SatCom
Spectrum management

FDL’19
AI competition

AI4EO Library
Signposting & Tools

Oxford AIMS
Doctoral Training

Constellation
Predictive maintenance & capacity management

Cooperations
international scene

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SHARE TOOLSET
TRIGGER FUNDING

FLF
AI Fellowship
Satellite Applications

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