| Directorate Portfolio | Application | Type of AI |
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| All | General Assistive Technology support - e.g. screen readers, transcriptions services, Office 365 AI tools | Various |
| Agriculture and Rural Economy | AI Powered Automations | UI Path |
| Agriculture and Rural Economy | AI Anomaly Detection | Dynatrace |
| Agriculture and Rural Economy | AI Developer Security | SNYK |
| COMMUNICATIONS AND MINISTERIAL SUPPORT: Brand Scotland | Research on renewables sectoral strengths. | Chat GPT |
| COMMUNICATIONS AND MINISTERIAL SUPPORT: INTERNAL COMMUNICATIONS | Use of AI to summarise non-sensitive, generic information in line with UK Govt guidance on generative AI | Google Bard |
| COMMUNICATIONS AND MINISTERIAL SUPPORT: INTERNAL COMMUNICATIONS | Subtitling of video content for accessibility. | Speech to text recognition |
| COMMUNICATIONS AND MINISTERIAL SUPPORT: News | Initial draft transcriptions of SG-related media interviews | Natural language processing (NLP) |
| COMMUNICATIONS AND MINISTERIAL SUPPORT: Strategy & Insight | Limited testing of the capability of large language models to support desk research associated with understanding attitudes and actions contributing to behaviour change. Any relevant findings are manually verified before any use is made of them for wider discussion / decision making. | Large language models, e.g. Chat GPT |
| Corporate Strategy and Marine Planning | We use Google alerts to generate on-line media searches. | Machine Learning |
| Corporate Strategy and Marine Planning | Use Adobe AI tools in our subscription to Creative Cloud. We use the editing and transcription tools and use it for image editing. AI also supports some design / graphic activity but this always go through human sense check / moderation before being shared externally | Machine Learning |

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| Corporate Transformation & Digital | Currently, the Scottish Government relies heavily on people to make connections between structured and unstructured data and information; New technologies, such as AI, semantic data and graph databases now exist which have the potential to allow us to get computers to do more of the work. The project centres around the use and deployment of a Graph Database for the creation of a Knowledge Graph to make these connections. The data used for the pilot is sample data (Improvement Activities and Programme for Government) and the project is all contained within a secure, private environment. | Natural Language Processing |
| Corporate transformation and workplace | Limited testing of the capability of natural language AI chat systems to support desk research associated with organisational change activities. | Chat GPT and Google Bard. |
| External Affairs | Foreign language translation | DeepL |
| External Affairs | Limited testing of the capability of natural language AI chat systems to support desk research, particularly comparative policy overviews. These are cross-checked against local (human) understanding for accuracy. | ChatGPT |
| External Affairs | Initial drafting social media posts, generating graphics for using on social media, checking tone and improving speaking notes. | Generative AI tools (ChatGPT and Microsoft Bing Image Creator). |
| Chief Economist | NESTA analysis of Scottish sectoral innovation (unpublished, 2019) | Machine learning/ web scraping |
| Chief Economist | Used in Innovation Strategy (2023) | Machine learning/ web scraping |
| Digital | With partners, NatureScot, the Digital Directorate embarked on a year-long journey with Dtime Limited to solve the problem of making public sector open data easier to find. By easier to find we mean people can find open data using simple search terms without needing to know the specific name of the data, who owns it and where it might be published. These AI techniques help make the datasets more discoverable. | AI techniques such as Natural Language Processing including Large Language Models |
| Directorate for Digital | AI is built in to the Azure Sentinel service, which is utilised within the Azure Cloud Platform. Sentinel utilises machine learning to monitor user and service behaviour to identify security threats. | Machine learning |
| Financial Management | Use of machine learning algorithms to increase confidence when utilising OCR to extract information from invoices, for subsequent data entry into finance system | UiPath Application of Machine Learning |
| General - Corporate | Use of Bing chat and associated web tool to identify areas of best practice as a starter to further work with stakeholders on ethical procurement guidance | Bing chat |

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| Health Workforce | As part of initial background work into a Rural Recruitment strategy a chatbot service was used to ascertain if research had missed any core areas. | Chatbot |
| Local Government and Housing | Analysis of high volume of qualitative responses to a consultation | Natural Language Processing models (various models) |
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| Marine Environment | Development of machine learning algorithms to identify seals in sonar images. This work is being carried out by the Seal Mammal Research Unit at the University of St Andrews under the Marine Mammal Scientific Support grant | Machine learning |
| Marine Scotland Science | Estimation of co-ancestry coefficients and assignment of individuals to populations from DNA using bayesian clustering algorithms | Maximum Likelihood, Machine learning |
| Marine Scotland Science | Genotype calling using Fluidigm SNP genotyping software | K-means clustering, Machine learning |
| Marine Scotland Science | Calculate point estimates and changes in effective population size from genetic data | Random Forest |
| Marine Scotland Science | Amplicon clustering and taxonomic assigment of metabarcoding sequences | Machine-learning |
| Marine Scotland Science | Estimate biodiversity estimates from eDNA metabarcoding data (Not yet in use) | Machine learning |
| Marine Scotland Science | Collaboration with University of Aberdeen Engineers who are developing image classification software for holograms of plankton collected with a new instrument that they developed and built. Our role is in facilitating the field deployments of the weeHoloCam and providing expert input on what the particles represent | Machine learning |
| Marine Scotland Science | Use of satellite data for the quantification of chlorophyll a in surface marine waters | Neural Networks |
| Marine Scotland Science | MSS funding 50% of a PhD with Datalab and SAMS investigating the use of Imaging Flow Cytobot technology to provide an early warning of Harmful Algal Blooms | Machine Learning |
| Marine Scotland Science | Elucidating phylogenetic relationship betweeen parasites, bacteria and viruses | Bayesian inference (Markov chain Monte Carlo algorithms) |
| Marine Scotland Science | Classification of marine biotopes and restoration gradients from environmental DNA data, using AI - RandomForest algorithms | Machine learning |
| Marine Scotland Science | Use of machine learning for providing information on the growth and age of salmonid fish from images of scales. In development, not yet in routine use | Machine learning |

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| Marine Scotland Science | Cumulative Effects Framework for estimating effects of marine renewables on birds and marine mammals, incorporates a range of models and model outputs. Chat GPT and Google Bard for occasional coding assistance in analysis | Statistical approaches, Bayesian estimation, machine learning |
| Marine Scotland Science | Using point data on presence or abundance to predict distribution of marine benthic species | Various methods possibly including Machine learning e.g. generalised liner models, Heirarchical Bayesian models, Gibbs models, MAXENT |
| Marine Scotland Science | Use of otolith chemistry data to infer fish larval origins and fish movements | Machine Learning (Random Forest) |
| Marine Scotland Science | Use of flapper skate tagging data to model growth, estimate fish age and assess flapper skate population dynamics | Statistical approaches, Bayesian hierarchical models |
| Marine Scotland Science | Use of presence-absence and abundance data from multiple sources to model fish distributions | Species Distribution Models (including Machine Learning-Random Forest) |
| Operational Delivery/SEDD/Marine Economy and Communities | Remote Electronic Monitoring projects:<br>AI in use on a number of fishing vessels to automatically count the number of scallop dredges being used<br>Use of AI being trialled on footage of creels being hauled, in order to seek to automatically count them. Proof of concept at this stage. | Machine learning |
| Roads, Network Maintenance, Bridges | Queensferry Crossing Ice Accretion – An algorithm reviews the forecast and site recorded climate data, against trigger levels that have been predefined by the bridge operator, to predict high risk periods for ice accretion on the Queensferry Crossing. The system alerts the operator when elevated risk periods are detected. This enables the scheduling of patrols and the management of live events. | (b) Logic- and knowledge-based approaches – as per the email of 2 June. |
| Roads, Network Maintenance, Bridges | Forth Road Bridge - Truss End Bearing Displacement – Machine learning is used to interrogate and correlate climate data with displacement data. The system uses this information to predict the expected displacement of the truss ends of the suspended span on Forth Road Bridge based on forecast climate data. The prediction is monitored against actual displacements and climate data recorded on site, and the prediction model improves. | (a) Machine learning approaches |
| Roads, Network Maintenance, Bridges | Queensferry Crossing ice accretion prediction using forward weather forecasts | Prediction |
| Roads, Network Maintenance, Bridges | Forth Road Bridge smart CCTV cameras | Prediction |

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| Roads, Network Maintenance, Bridges | Bridge scour prediction research project in partnership with Strathclyde University | Bayesian estimation |
| Science, Evidence, Digital and Data | Use of machine learning to identify and count fish in signals obtained from resistivity-based fish counters as part of data verification / validation processes. In development, not yet in routine use | Machine learning |
| Science, Evidence, Digital and Data | AVIMS - Automated Video Identification of Marine Species. (Report available at: https://www.gov.scot/publications/new-application-automated-video-identification-marine-species-avims/). A machine learning tool was developed to improve efficiency of video imagery in marine and freshwater survey work. Using machine learning to identify fish in video imagery from in-river fish counter sites; to identify and count salmon smolts in underwater video footage from mid-water trawls; to identify and count certain marine benthic organisms in underwater video survey footage. Utility of the tools use in analysing video footage from fish counters is in review. Other uses have been discontinued and the tool is not currently in routine use. This project built on an earlier project on the same topics (other than the use at in-river fish counter sites) using similar methodology which MSS commissioned Marynsol to carry out. | Machine Learning |
| Scottish Government Agencies - Scottish Public Pensions Agency - Finance - Enter SPPA Invoice Data into SEAS | Product – UiPath Application of Machine Learning – Use of machine learning algorithms to increase confidence when utilising OCR to extract information from invoices, for subsequent data entry into finance system (SEAS) | Machine learning using a supervised learning model |
| Scottish Government Agencies - Student Awards Agency Scotland - Finance - DSA Invoicing | Product – UiPath Application of Machine Learning – Use of machine learning algorithms to increase confidence when utilising OCR to extract information from invoices, for subsequent data entry into finance system (StEPS) | Machine learning using a supervised learning model |
| Scottish Government Core - DG Corporate - Director for Finance Management - Financial Services Division - AP & Vendor Maintenance - Enter AP Invoice Data into SEAS | Product – UiPath Application of Machine Learning – Use of machine learning algorithms to increase confidence when utilising OCR to extract information from invoices, for subsequent data entry into finance system (SEAS) | Machine learning using a supervised learning model |
| Scottish Government Legal Directorate | SGLD is using legal information systems provided by external suppliers which use AI to assist in the retrieval of the most relevant legal information (case law, legislation, articles, etc) when a search is carried out | Machine learning |

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| Scottish Government Legal Directorate | In relation to public inquiries, SGLD and its external suppliers use e-discovery tools (for example to find all references to a particular matter in a large number of documents) and these tools incorporate AI | Machine learning |
| Scottish Procurement & Property Directorate | The MI team (Supplier eLcom) use AI to validate the accuracy of Supplier data SG already have before issuing reports. The AI validates the Supplier details by checking against other sources e.g. Companies House, Dunn and Bradstreet,…. In summary, a back office process with low risk. | Machine Learning |