|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PICO | | Description | | Keywords | | GPT4-Additions | | Final authors’ selection | |
| **P**opulation | | All algorithms/statistical methods that have been used to predict and find drivers for HTA in all countries, published in English | | Health Technology Assessment, HTA, Reimbursement Decisions, ~~Systematic Literature Review, Meta Analys\*,~~ | | (Technology AND Appraisal) Economic Evaluation, Cost-Effectiveness Analysis, Quality Assessment, Medical Technology Evaluation | | Health Technology Assessment, HTA, Reimbursement Decision$, Technology Appraisal, Technology Evaluation  Based on known relevant literature (<https://pubmed.ncbi.nlm.nih.gov/29124632/>, <https://pubmed.ncbi.nlm.nih.gov/23864365/>, <https://pubmed.ncbi.nlm.nih.gov/23688554/>), added MeSH Terms:  **PUBMED**:  "Delivery of Health Care/economics"[MeSH]  "Delivery of Health Care/organization and administration"[MeSH]  "Financing, Government/organization and administration"[MAJR]  "Financing, Government/standards"[MAJR]  "Technology Assessment, Biomedical/methods"[MeSH]  "Technology Assessment, Biomedical/organization and administration"[MeSH]  "Technology Assessment, Biomedical/economics"[MAJR]  "Decision Making"[MAJR]  "Health Priorities"[MAJR]  "Public Expenditures"[MAJR]  "Delivery of Health Care/organization and administration"[MeSH]  **EMBASE:**  [access to information](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22access+to+information%22%2f) [article](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22article%22%2f) [evidence based medicine](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22evidence+based+medicine%22%2f) [funding](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22funding%22%2f) [health care cost](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22health+care+cost%22%2f) [human](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22human%22%2f) [\*medical decision making](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%2a%22medical+decision+making%22%2f) [medical technology](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22medical+technology%22%2f) [national health service](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22national+health+service%22%2f) [practice guideline](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22practice+guideline%22%2f) [priority journal](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22priority+journal%22%2f) [quality adjusted life year](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22quality+adjusted+life+year%22%2f) [randomized controlled trial (topic)](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22randomized+controlled+trial+%28topic%29%22%2f) [sensitivity analysis](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22sensitivity+analysis%22%2f) [socioeconomics](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22socioeconomics%22%2f)  [article](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22article%22%2f) [controlled study](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22controlled+study%22%2f) [cost effectiveness analysis](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22cost+effectiveness+analysis%22%2f) [\*decision making](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%2a%22decision+making%22%2f) [drug industry](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22drug+industry%22%2f) [\*funding](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%2a%22funding%22%2f) [health care cost](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22health+care+cost%22%2f) [human](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22human%22%2f) [Netherlands](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22Netherlands%22%2f) [\*pharmaceutics](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%2a%22pharmaceutics%22%2f) [priority journal](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22priority+journal%22%2f) [randomized controlled trial (topic)](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22randomized+controlled+trial+%28topic%29%22%2f) [reimbursement](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22reimbursement%22%2f)  [advisory committee](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22advisory+committee%22%2f) [\*biomedical technology assessment](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%2a%22biomedical+technology+assessment%22%2f) [clinical effectiveness](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22clinical+effectiveness%22%2f) [cost effectiveness analysis](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22cost+effectiveness+analysis%22%2f) [disease severity](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22disease+severity%22%2f) [Embase](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22Embase%22%2f) [funding](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22funding%22%2f) [health care cost](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22health+care+cost%22%2f) [human](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22human%22%2f) [\*medical decision making](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%2a%22medical+decision+making%22%2f) [Medline](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22Medline%22%2f) [\*patient preference](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%2a%22patient+preference%22%2f) [priority journal](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22priority+journal%22%2f) [quality adjusted life year](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22quality+adjusted+life+year%22%2f) [review](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22review%22%2f) [systematic review](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22systematic+review%22%2f) [Web of Science](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%22Web+of+Science%22%2f) [\*stated preference](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&Search+Link=%2a%22stated+preference%22%2f) | |
| **I**ntervention | | MedTech and Pharma | | (no keywords for increased sensitivity) | | N/A | | N/A | |
| **C**ontrol | | No Comparison | | - | | N/A | | N/A | |
| **O**utcome | | **HTA decisions**   * **Prediction of decision**: ROC, Accuracy, Specificity, Sensitivity, drivers/coefficients   OR   * **Decision Drivers:** e.g., a statistical analysis | | Machine Learning, Artificial Intelligence, AI, Chat-GPT, ChatGPT, GPT, generative AI, Deep Learning, Natural Language Processing, NLP, Predictive modelling, Regression, Multinomial, Logistic, Predictive Analysis, Statistical Modelling, Data Mining, Decision Trees, Neural Networks, Supervised Learning, Unsupervised Learning, Clustering, Component Analysis, Feature Engineering, Feature Selection | | Linear Regression, Time Series Analysis, Bayesian Analysis, Survival Analysis, Ensemble Methods, Cross-Validation, Model Validation, Convolutional Neural Networks, CNN, Recurrent Neural Networks, RNN, Long Short-Term Memory Networks, LSTM, Reinforcement Learning, Transfer Learning, Anomaly Detection, Model Interpretability, Hyperparameter Tuning | | Machine Learning, Artificial Intelligence, AI, Chat-GPT, ChatGPT, GPT, generative AI, Deep Learning, Natural Language Processing, NLP, Predictive modelling, Regression, Predictive Analysis, Statistical Modelling, Data Mining, Decision Trees, Neural Networks, Supervised Learning, Unsupervised Learning, Clustering, Component Analysis, Feature Engineering, Feature Selection, Ensemble Methods, Cross-Validation, Model Validation, Convolutional Neural Networks, CNN, Recurrent Neural Networks, RNN, Long Short-Term Memory Networks, LSTM, Reinforcement Learning, Transfer Learning, Anomaly Detection, Model, Hyperparameter Tuning  Based on known relevant literature (<https://pubmed.ncbi.nlm.nih.gov/29124632/>, <https://pubmed.ncbi.nlm.nih.gov/23864365/>) added words:  Multivariate analys\*  Based on known relevant literature (<https://pubmed.ncbi.nlm.nih.gov/29124632/>, <https://pubmed.ncbi.nlm.nih.gov/23864365/>, <https://pubmed.ncbi.nlm.nih.gov/23688554/>) added words:  "Cost-Benefit Analysis"[MeSH]  "Models, Economic"[MeSH] | |
| Study Type | | * All years * Peer-reviewed published * Congress Papers * Grey literature (arXiv) * Data Science / Machine Learning archives | | DATABASES to be searched:   * PubMed * Scopus * Embase * Arxiv | | Additional databases suggestions (if any) from CHATGPT:  Web of Science, IEEE Xplore, Cochrane Library | | * PubMed * Scopus * Embase * Arxiv * IEEE Xplore * Value in Health (ISPOR posters) * International Journal of Technology Assessment in Health Care (HTAi) | |

**PUBMED RESULTS and STRATEGY MODIFICATION**:

| **Search** | **Actions** | **Details** | **Query** | **Results** | **Time** |
| --- | --- | --- | --- | --- | --- |
| #61 |  |  | Search: **(((((((((((((((Health Technology Assessment) OR (HTA)) OR (Reimbursement Decision\*)) OR (Technology Appraisal)) OR (Technology Evaluation)) OR ("Delivery of Health Care/economics"[MeSH])) OR ("Financing, Government/organization and administration"[MAJR])) OR ("Financing, Government/standards"[MAJR])) OR ("Technology Assessment, Biomedical/methods"[MeSH])) OR ("Technology Assessment, Biomedical/organization and administration"[MeSH])) OR ("Technology Assessment, Biomedical/economics"[MAJR])) OR ("Decision Making"[MAJR])) OR ("Health Priorities"[MAJR])) OR ("Public Expenditures"[MAJR])) OR ("Delivery of Health Care/organization and administration"[MeSH])) AND ((((((((((((((((((((((((((((((((((((((((Machine Learning) OR (Artificial Intelligence)) OR (AI)) OR (Chat-GPT)) OR (ChatGPT)) OR (GPT)) OR (generative AI)) OR (Deep Learning)) OR (Natural Language Processing)) OR (NLP)) OR (Predictive modelling)) OR (Regression)) OR (Predictive Analysis)) OR (Statistical Modelling)) OR (Data Mining)) OR (Decision Trees)) OR (Neural Networks)) OR (Supervised Learning)) OR (Unsupervised Learning)) OR (Clustering)) OR (Component Analysis)) OR (Feature Engineering)) OR (Feature Selection)) OR (Ensemble Methods)) OR (Cross-Validation)) OR (Model Validation)) OR (Convolutional Neural Networks)) OR (CNN)) OR (Recurrent Neural Networks)) OR (RNN)) OR (Long Short-Term Memory Networks)) OR (LSTM)) OR (Reinforcement Learning)) OR (Transfer Learning)) OR (Anomaly Detection)) OR (Model)) OR (Hyperparameter Tuning)) OR (Multivariate analys\*)) OR ("Cost-Benefit Analysis"[MeSH])) OR ("Models, Economic"[MeSH]))** | [317,321](https://pubmed.ncbi.nlm.nih.gov/?term=longquery40fd77a0fe824648a821&sort=) | 11:46:19 |
| #60 |  |  | Search: **(((((((((((((((((((((((((((((((((((((((Machine Learning) OR (Artificial Intelligence)) OR (AI)) OR (Chat-GPT)) OR (ChatGPT)) OR (GPT)) OR (generative AI)) OR (Deep Learning)) OR (Natural Language Processing)) OR (NLP)) OR (Predictive modelling)) OR (Regression)) OR (Predictive Analysis)) OR (Statistical Modelling)) OR (Data Mining)) OR (Decision Trees)) OR (Neural Networks)) OR (Supervised Learning)) OR (Unsupervised Learning)) OR (Clustering)) OR (Component Analysis)) OR (Feature Engineering)) OR (Feature Selection)) OR (Ensemble Methods)) OR (Cross-Validation)) OR (Model Validation)) OR (Convolutional Neural Networks)) OR (CNN)) OR (Recurrent Neural Networks)) OR (RNN)) OR (Long Short-Term Memory Networks)) OR (LSTM)) OR (Reinforcement Learning)) OR (Transfer Learning)) OR (Anomaly Detection)) OR (Model)) OR (Hyperparameter Tuning)) OR (Multivariate analys\*)) OR ("Cost-Benefit Analysis"[MeSH])) OR ("Models, Economic"[MeSH])** | [8,051,815](https://pubmed.ncbi.nlm.nih.gov/?term=%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28%28Machine+Learning%29+OR+%28Artificial+Intelligence%29%29+OR+%28AI%29%29+OR+%28Chat-GPT%29%29+OR+%28ChatGPT%29%29+OR+%28GPT%29%29+OR+%28generative+AI%29%29+OR+%28Deep+Learning%29%29+OR+%28Natural+Language+Processing%29%29+OR+%28NLP%29%29+OR+%28Predictive+modelling%29%29+OR+%28Regression%29%29+OR+%28Predictive+Analysis%29%29+OR+%28Statistical+Modelling%29%29+OR+%28Data+Mining%29%29+OR+%28Decision+Trees%29%29+OR+%28Neural+Networks%29%29+OR+%28Supervised+Learning%29%29+OR+%28Unsupervised+Learning%29%29+OR+%28Clustering%29%29+OR+%28Component+Analysis%29%29+OR+%28Feature+Engineering%29%29+OR+%28Feature+Selection%29%29+OR+%28Ensemble+Methods%29%29+OR+%28Cross-Validation%29%29+OR+%28Model+Validation%29%29+OR+%28Convolutional+Neural+Networks%29%29+OR+%28CNN%29%29+OR+%28Recurrent+Neural+Networks%29%29+OR+%28RNN%29%29+OR+%28Long+Short-Term+Memory+Networks%29%29+OR+%28LSTM%29%29+OR+%28Reinforcement+Learning%29%29+OR+%28Transfer+Learning%29%29+OR+%28Anomaly+Detection%29%29+OR+%28Model%29%29+OR+%28Hyperparameter+Tuning%29%29+OR+%28Multivariate+analys%2A%29%29+OR+%28%22Cost-Benefit+Analysis%22%5BMeSH%5D%29%29+OR+%28%22Models%2C+Economic%22%5BMeSH%5D%29&sort=) | 11:46:02 |
| #59 |  |  | Search: **"Models, Economic"[MeSH]** | [16,230](https://pubmed.ncbi.nlm.nih.gov/?term=%22Models%2C+Economic%22%5BMeSH%5D&sort=relevance) | 11:44:33 |
| #58 |  |  | Search: **"Cost-Benefit Analysis"[MeSH]** | [92,844](https://pubmed.ncbi.nlm.nih.gov/?term=%22Cost-Benefit+Analysis%22%5BMeSH%5D&sort=relevance) | 11:44:25 |
| #57 |  |  | Search: **Multivariate analys\*** | [564,431](https://pubmed.ncbi.nlm.nih.gov/?term=Multivariate+analys%2A&sort=relevance) | 11:44:18 |
| #56 |  |  | Search: **Hyperparameter Tuning** | [824](https://pubmed.ncbi.nlm.nih.gov/?term=Hyperparameter+Tuning&sort=relevance) | 11:44:08 |
| #55 |  |  | Search: **Model** | [4,808,201](https://pubmed.ncbi.nlm.nih.gov/?term=Model&sort=relevance) | 11:44:01 |
| #54 |  |  | Search: **Anomaly Detection** | [87,562](https://pubmed.ncbi.nlm.nih.gov/?term=Anomaly+Detection&sort=relevance) | 11:43:57 |
| #53 |  |  | Search: **Transfer Learning** | [138,786](https://pubmed.ncbi.nlm.nih.gov/?term=Transfer+Learning&sort=relevance) | 11:43:52 |
| #52 |  |  | Search: **Reinforcement Learning** | [76,852](https://pubmed.ncbi.nlm.nih.gov/?term=Reinforcement+Learning&sort=relevance) | 11:43:47 |
| #51 |  |  | Search: **LSTM** | [4,526](https://pubmed.ncbi.nlm.nih.gov/?term=LSTM&sort=relevance) | 11:43:43 |
| #50 |  |  | Search: **Long Short-Term Memory Networks** | [4,636](https://pubmed.ncbi.nlm.nih.gov/?term=Long+Short-Term+Memory+Networks&sort=relevance) | 11:43:38 |
| #49 |  |  | Search: **RNN** | [1,973](https://pubmed.ncbi.nlm.nih.gov/?term=RNN&sort=relevance) | 11:43:33 |
| #48 |  |  | Search: **Recurrent Neural Networks** | [5,987](https://pubmed.ncbi.nlm.nih.gov/?term=Recurrent+Neural+Networks&sort=relevance) | 11:43:29 |
| #47 |  |  | Search: **CNN** | [16,273](https://pubmed.ncbi.nlm.nih.gov/?term=CNN&sort=relevance) | 11:43:25 |
| #46 |  |  | Search: **Convolutional Neural Networks** | [21,973](https://pubmed.ncbi.nlm.nih.gov/?term=Convolutional+Neural+Networks&sort=relevance) | 11:43:22 |
| #45 |  |  | Search: **Model Validation** | [346,460](https://pubmed.ncbi.nlm.nih.gov/?term=Model+Validation&sort=relevance) | 11:43:18 |
| #44 |  |  | Search: **Cross-Validation** | [30,078](https://pubmed.ncbi.nlm.nih.gov/?term=Cross-Validation&sort=relevance) | 11:43:15 |
| #43 |  |  | Search: **Ensemble Methods** | [20,339](https://pubmed.ncbi.nlm.nih.gov/?term=Ensemble+Methods&sort=) | 11:43:10 |
| #42 |  |  | Search: **Feature Selection** | [153,738](https://pubmed.ncbi.nlm.nih.gov/?term=Feature+Selection&sort=relevance) | 11:42:58 |
| #40 |  |  | Search: **Feature Engineering** | [146,513](https://pubmed.ncbi.nlm.nih.gov/?term=Feature+Engineering&sort=relevance) | 11:42:51 |
| #39 |  |  | Search: **Component Analysis** | [514,256](https://pubmed.ncbi.nlm.nih.gov/?term=Component+Analysis&sort=relevance) | 11:42:46 |
| #38 |  |  | Search: **Clustering** | [537,922](https://pubmed.ncbi.nlm.nih.gov/?term=Clustering&sort=relevance) | 11:42:42 |
| #37 |  |  | Search: **Unsupervised Learning** | [8,649](https://pubmed.ncbi.nlm.nih.gov/?term=Unsupervised+Learning&sort=relevance) | 11:42:38 |
| #36 |  |  | Search: **Supervised Learning** | [93,382](https://pubmed.ncbi.nlm.nih.gov/?term=Supervised+Learning&sort=relevance) | 11:42:33 |
| #35 |  |  | Search: **Neural Networks** | [109,744](https://pubmed.ncbi.nlm.nih.gov/?term=Neural+Networks&sort=relevance) | 11:42:29 |
| #34 |  |  | Search: **Decision Trees** | [16,138](https://pubmed.ncbi.nlm.nih.gov/?term=Decision+Trees&sort=relevance) | 11:42:25 |
| #33 |  |  | Search: **Data Mining** | [38,363](https://pubmed.ncbi.nlm.nih.gov/?term=Data+Mining&sort=relevance) | 11:42:21 |
| #32 |  |  | Search: **Statistical Modelling** | [539,417](https://pubmed.ncbi.nlm.nih.gov/?term=Statistical+Modelling&sort=relevance) | 11:42:16 |
| #31 |  |  | Search: **Predictive Analysis** | [862,861](https://pubmed.ncbi.nlm.nih.gov/?term=Predictive+Analysis&sort=relevance) | 11:42:11 |
| #30 |  |  | Search: **Regression** | [1,136,767](https://pubmed.ncbi.nlm.nih.gov/?term=Regression&sort=relevance) | 11:42:05 |
| #29 |  |  | Search: **Predictive modelling** | [696,812](https://pubmed.ncbi.nlm.nih.gov/?term=Predictive+modelling&sort=relevance) | 11:42:01 |
| #28 |  |  | Search: **NLP** | [4,295](https://pubmed.ncbi.nlm.nih.gov/?term=NLP&sort=relevance) | 11:41:56 |
| #27 |  |  | Search: **Natural Language Processing** | [12,054](https://pubmed.ncbi.nlm.nih.gov/?term=Natural+Language+Processing&sort=relevance) | 11:41:51 |
| #26 |  |  | Search: **Deep Learning** | [62,904](https://pubmed.ncbi.nlm.nih.gov/?term=Deep+Learning&sort=relevance) | 11:41:47 |
| #25 |  |  | Search: **generative AI** | [153,644](https://pubmed.ncbi.nlm.nih.gov/?term=generative+AI&sort=) | 11:41:43 |
| #24 |  |  | Search: **GPT** | [5,389](https://pubmed.ncbi.nlm.nih.gov/?term=GPT&sort=relevance) | 11:41:29 |
| #22 |  |  | Search: **ChatGPT** | [1,030](https://pubmed.ncbi.nlm.nih.gov/?term=ChatGPT&sort=relevance) | 11:41:21 |
| #21 |  |  | Search: **Chat-GPT** | [44](https://pubmed.ncbi.nlm.nih.gov/?term=Chat-GPT&sort=relevance) | 11:41:16 |
| #20 |  |  | Search: **AI** | [1,083,479](https://pubmed.ncbi.nlm.nih.gov/?term=AI&sort=relevance) | 11:41:11 |
| #19 |  |  | Search: **Artificial Intelligence** | [208,331](https://pubmed.ncbi.nlm.nih.gov/?term=Artificial+Intelligence&sort=relevance) | 11:41:07 |
| #18 |  |  | Search: **Machine Learning** | [125,021](https://pubmed.ncbi.nlm.nih.gov/?term=Machine+Learning&sort=relevance) | 11:41:01 |
| #17 |  |  | Search: **((((((((((((((Health Technology Assessment) OR (HTA)) OR (Reimbursement Decision\*)) OR (Technology Appraisal)) OR (Technology Evaluation)) OR ("Delivery of Health Care/economics"[MeSH])) OR ("Financing, Government/organization and administration"[MAJR])) OR ("Financing, Government/standards"[MAJR])) OR ("Technology Assessment, Biomedical/methods"[MeSH])) OR ("Technology Assessment, Biomedical/organization and administration"[MeSH])) OR ("Technology Assessment, Biomedical/economics"[MAJR])) OR ("Decision Making"[MAJR])) OR ("Health Priorities"[MAJR])) OR ("Public Expenditures"[MAJR])) OR ("Delivery of Health Care/organization and administration"[MeSH])** | [883,462](https://pubmed.ncbi.nlm.nih.gov/?term=%28%28%28%28%28%28%28%28%28%28%28%28%28%28Health+Technology+Assessment%29+OR+%28HTA%29%29+OR+%28Reimbursement+Decision%2A%29%29+OR+%28Technology+Appraisal%29%29+OR+%28Technology+Evaluation%29%29+OR+%28%22Delivery+of+Health+Care%2Feconomics%22%5BMeSH%5D%29%29+OR+%28%22Financing%2C+Government%2Forganization+and+administration%22%5BMAJR%5D%29%29+OR+%28%22Financing%2C+Government%2Fstandards%22%5BMAJR%5D%29%29+OR+%28%22Technology+Assessment%2C+Biomedical%2Fmethods%22%5BMeSH%5D%29%29+OR+%28%22Technology+Assessment%2C+Biomedical%2Forganization+and+administration%22%5BMeSH%5D%29%29+OR+%28%22Technology+Assessment%2C+Biomedical%2Feconomics%22%5BMAJR%5D%29%29+OR+%28%22Decision+Making%22%5BMAJR%5D%29%29+OR+%28%22Health+Priorities%22%5BMAJR%5D%29%29+OR+%28%22Public+Expenditures%22%5BMAJR%5D%29%29+OR+%28%22Delivery+of+Health+Care%2Forganization+and+administration%22%5BMeSH%5D%29&sort=) | 11:40:48 |
| #7 |  |  | Search: **"Delivery of Health Care/organization and administration"[MeSH]** | [195,189](https://pubmed.ncbi.nlm.nih.gov/?term=%22Delivery+of+Health+Care%2Forganization+and+administration%22%5BMeSH%5D&sort=relevance) | 11:40:19 |
| #16 |  |  | Search: **"Public Expenditures"[MAJR]** | [16](https://pubmed.ncbi.nlm.nih.gov/?term=%22Public+Expenditures%22%5BMAJR%5D&sort=relevance) | 11:40:12 |
| #15 |  |  | Search: **"Health Priorities"[MAJR]** | [5,707](https://pubmed.ncbi.nlm.nih.gov/?term=%22Health+Priorities%22%5BMAJR%5D&sort=) | 11:40:07 |
| #14 |  |  | Search: **"Decision Making"[MAJR]** | [105,120](https://pubmed.ncbi.nlm.nih.gov/?term=%22Decision+Making%22%5BMAJR%5D&sort=relevance) | 11:39:47 |
| #12 |  |  | Search: **"Technology Assessment, Biomedical/economics"[MAJR]** | [944](https://pubmed.ncbi.nlm.nih.gov/?term=%22Technology+Assessment%2C+Biomedical%2Feconomics%22%5BMAJR%5D&sort=relevance) | 11:39:36 |
| #11 |  |  | Search: **"Technology Assessment, Biomedical/organization and administration"[MeSH]** | [3,102](https://pubmed.ncbi.nlm.nih.gov/?term=%22Technology+Assessment%2C+Biomedical%2Forganization+and+administration%22%5BMeSH%5D&sort=relevance) | 11:39:30 |
| #10 |  |  | Search: **"Technology Assessment, Biomedical/methods"[MeSH]** | [1,715](https://pubmed.ncbi.nlm.nih.gov/?term=%22Technology+Assessment%2C+Biomedical%2Fmethods%22%5BMeSH%5D&sort=relevance) | 11:39:24 |
| #9 |  |  | Search: **"Financing, Government/standards"[MAJR]** | [1,365](https://pubmed.ncbi.nlm.nih.gov/?term=%22Financing%2C+Government%2Fstandards%22%5BMAJR%5D&sort=relevance) | 11:39:19 |
| #8 |  |  | Search: **"Financing, Government/organization and administration"[MAJR]** | [32,112](https://pubmed.ncbi.nlm.nih.gov/?term=%22Financing%2C+Government%2Forganization+and+administration%22%5BMAJR%5D&sort=relevance) | 11:39:12 |
| #6 |  |  | Search: **"Delivery of Health Care/economics"[MeSH]** | [55,862](https://pubmed.ncbi.nlm.nih.gov/?term=%22Delivery+of+Health+Care%2Feconomics%22%5BMeSH%5D&sort=relevance) | 11:39:04 |
| #5 |  |  | Search: **Technology Evaluation** | [500,494](https://pubmed.ncbi.nlm.nih.gov/?term=Technology+Evaluation&sort=relevance) | 11:38:53 |
| #4 |  |  | Search: **Technology Appraisal** | [8,247](https://pubmed.ncbi.nlm.nih.gov/?term=Technology+Appraisal&sort=relevance) | 11:38:49 |
| #3 |  |  | Search: **Reimbursement Decision\*** | [6,085](https://pubmed.ncbi.nlm.nih.gov/?term=Reimbursement+Decision%2A&sort=relevance) | 11:38:43 |
| #2 |  |  | Search: **HTA** | [8,427](https://pubmed.ncbi.nlm.nih.gov/?term=HTA&sort=relevance) | 11:38:36 |
| #1 |  |  | Search: **Health Technology Assessment** | [83,894](https://pubmed.ncbi.nlm.nih.gov/?term=Health+Technology+Assessment&sort=) | 11:38:32 |

#As we have too many results, a threshold of 1,000 results was agreed in the protocol, the search will be limited to Title and abstracts

| **Search** | **Actions** | **Details** | **Query** | **Results** | **Time** |
| --- | --- | --- | --- | --- | --- |
| #62 |  |  | Search: **((Health Technology Assessment[Title/Abstract] OR HTA[Title/Abstract] OR Reimbursement Decision\*[Title/Abstract] OR Technology Appraisal[Title/Abstract] OR Technology Evaluation[Title/Abstract]) OR "Delivery of Health Care/economics"[MeSH] OR "Financing, Government/organization and administration"[MAJR] OR "Financing, Government/standards"[MAJR] OR "Technology Assessment, Biomedical/methods"[MeSH] OR "Technology Assessment, Biomedical/organization and administration"[MeSH] OR "Technology Assessment, Biomedical/economics"[MAJR] OR "Decision Making"[MAJR] OR "Health Priorities"[MAJR] OR "Public Expenditures"[MAJR] OR "Delivery of Health Care/organization and administration"[MeSH]) AND ((Machine Learning[Title/Abstract] OR Artificial Intelligence[Title/Abstract] OR AI[Title/Abstract] OR Chat-GPT[Title/Abstract] OR ChatGPT[Title/Abstract] OR GPT[Title/Abstract] OR generative AI[Title/Abstract] OR Deep Learning[Title/Abstract] OR Natural Language Processing[Title/Abstract] OR NLP[Title/Abstract] OR Predictive modelling[Title/Abstract] OR Regression[Title/Abstract] OR Predictive Analysis[Title/Abstract] OR Statistical Modelling[Title/Abstract] OR Data Mining[Title/Abstract] OR Decision Trees[Title/Abstract] OR Neural Networks[Title/Abstract] OR Supervised Learning[Title/Abstract] OR Unsupervised Learning[Title/Abstract] OR Clustering[Title/Abstract] OR Component Analysis[Title/Abstract] OR Feature Engineering[Title/Abstract] OR Feature Selection[Title/Abstract] OR Ensemble Methods[Title/Abstract] OR Cross-Validation[Title/Abstract] OR Model Validation[Title/Abstract] OR Convolutional Neural Networks[Title/Abstract] OR CNN[Title/Abstract] OR Recurrent Neural Networks[Title/Abstract] OR RNN[Title/Abstract] OR Long Short-Term Memory Networks[Title/Abstract] OR LSTM[Title/Abstract] OR Reinforcement Learning[Title/Abstract] OR Transfer Learning[Title/Abstract] OR Anomaly Detection[Title/Abstract] OR Model[Title/Abstract] OR Hyperparameter Tuning[Title/Abstract] OR Multivariate analys\*[Title/Abstract]) OR "Cost-Benefit Analysis"[MeSH] OR "Models, Economic"[MeSH])** | [49,299](https://pubmed.ncbi.nlm.nih.gov/?term=longqueryc9d186b176c1d0930825&sort=) | 11:51:48 |

#removing [model](https://pubmed.ncbi.nlm.nih.gov/?term=model%5BTitle%2FAbstract%5D&sort=) from the query as it gives 2,727,637 results, and we have a threshold of 1000 results per database (before duplicates removal). [Regression](https://pubmed.ncbi.nlm.nih.gov/?term=regression%5BTitle%2FAbstract%5D) is not removed, despite having 1,037,579 results, as it is more relevant compared to model inclusion, which results in different usage ways of the term, like in-vivo models.

| **Search** | **Actions** | **Details** | **Query** | **Results** | **Time** |
| --- | --- | --- | --- | --- | --- |
| #63 |  |  | Search: **((Health Technology Assessment[Title/Abstract] OR HTA[Title/Abstract] OR Reimbursement Decision\*[Title/Abstract] OR Technology Appraisal[Title/Abstract] OR Technology Evaluation[Title/Abstract]) OR "Delivery of Health Care/economics"[MeSH] OR "Financing, Government/organization and administration"[MAJR] OR "Financing, Government/standards"[MAJR] OR "Technology Assessment, Biomedical/methods"[MeSH] OR "Technology Assessment, Biomedical/organization and administration"[MeSH] OR "Technology Assessment, Biomedical/economics"[MAJR] OR "Decision Making"[MAJR] OR "Health Priorities"[MAJR] OR "Public Expenditures"[MAJR] OR "Delivery of Health Care/organization and administration"[MeSH]) AND ((Machine Learning[Title/Abstract] OR Artificial Intelligence[Title/Abstract] OR AI[Title/Abstract] OR Chat-GPT[Title/Abstract] OR ChatGPT[Title/Abstract] OR GPT[Title/Abstract] OR generative AI[Title/Abstract] OR Deep Learning[Title/Abstract] OR Natural Language Processing[Title/Abstract] OR NLP[Title/Abstract] OR Predictive modelling[Title/Abstract] OR Regression[Title/Abstract] OR Predictive Analysis[Title/Abstract] OR Statistical Modelling[Title/Abstract] OR Data Mining[Title/Abstract] OR Decision Trees[Title/Abstract] OR Neural Networks[Title/Abstract] OR Supervised Learning[Title/Abstract] OR Unsupervised Learning[Title/Abstract] OR Clustering[Title/Abstract] OR Component Analysis[Title/Abstract] OR Feature Engineering[Title/Abstract] OR Feature Selection[Title/Abstract] OR Ensemble Methods[Title/Abstract] OR Cross-Validation[Title/Abstract] OR Model Validation[Title/Abstract] OR Convolutional Neural Networks[Title/Abstract] OR CNN[Title/Abstract] OR Recurrent Neural Networks[Title/Abstract] OR RNN[Title/Abstract] OR Long Short-Term Memory Networks[Title/Abstract] OR LSTM[Title/Abstract] OR Reinforcement Learning[Title/Abstract] OR Transfer Learning[Title/Abstract] OR Anomaly Detection[Title/Abstract] OR Hyperparameter Tuning[Title/Abstract] OR Multivariate analys\*[Title/Abstract]) OR "Cost-Benefit Analysis"[MeSH] OR "Models, Economic"[MeSH])** | [28,091](https://pubmed.ncbi.nlm.nih.gov/?term=longquery3733ecad8a4a28901790&sort=) | 11:55:26 |

#To create a more targeted search strategy, we will begin by removing the broader MeSH terms that were derived from already known relevant papers. Specifically, the terms "Cost-Benefit Analysis"[MeSH] and "Models, Economic"[MeSH] are being excluded as they are bringing in papers that may not be directly relevant to the prediction or analysis of HTA decisions. This includes papers that have performed a cost-effectiveness analysis (CEA) as part of the HTA, but might not be aligned with the specific focus of our research.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| #64 |  |  | Search: **(Health Technology Assessment[Title/Abstract] OR HTA[Title/Abstract] OR Reimbursement Decision\*[Title/Abstract] OR Technology Appraisal[Title/Abstract] OR Technology Evaluation[Title/Abstract] OR "Delivery of Health Care/economics"[MeSH] OR "Financing, Government/organization and administration"[MAJR] OR "Financing, Government/standards"[MAJR] OR "Technology Assessment, Biomedical/methods"[MeSH] OR "Technology Assessment, Biomedical/organization and administration"[MeSH] OR "Technology Assessment, Biomedical/economics"[MAJR] OR "Decision Making"[MAJR] OR "Health Priorities"[MAJR] OR "Public Expenditures"[MAJR] OR "Delivery of Health Care/organization and administration"[MeSH]) AND (Machine Learning[Title/Abstract] OR Artificial Intelligence[Title/Abstract] OR AI[Title/Abstract] OR Chat-GPT[Title/Abstract] OR ChatGPT[Title/Abstract] OR GPT[Title/Abstract] OR generative AI[Title/Abstract] OR Deep Learning[Title/Abstract] OR Natural Language Processing[Title/Abstract] OR NLP[Title/Abstract] OR Predictive modelling[Title/Abstract] OR Regression[Title/Abstract] OR Predictive Analysis[Title/Abstract] OR Statistical Modelling[Title/Abstract] OR Data Mining[Title/Abstract] OR Decision Trees[Title/Abstract] OR Neural Networks[Title/Abstract] OR Supervised Learning[Title/Abstract] OR Unsupervised Learning[Title/Abstract] OR Clustering[Title/Abstract] OR Component Analysis[Title/Abstract] OR Feature Engineering[Title/Abstract] OR Feature Selection[Title/Abstract] OR Ensemble Methods[Title/Abstract] OR Cross-Validation[Title/Abstract] OR Model Validation[Title/Abstract] OR Convolutional Neural Networks[Title/Abstract] OR CNN[Title/Abstract] OR Recurrent Neural Networks[Title/Abstract] OR RNN[Title/Abstract] OR Long Short-Term Memory Networks[Title/Abstract] OR LSTM[Title/Abstract] OR Reinforcement Learning[Title/Abstract] OR Transfer Learning[Title/Abstract] OR Anomaly Detection[Title/Abstract] OR Hyperparameter Tuning[Title/Abstract] OR Multivariate analys\*[Title/Abstract])** | [13,628](https://pubmed.ncbi.nlm.nih.gov/?term=longquerydc311538cf920fec19cb&sort=) | 12:07:56 |

#now continuing with the removal of **"The search strategy has been further revised to exclude broader terms that may not be directly relevant to Health Technology Assessment (HTA). Specifically, the terms "Delivery of Health Care/economics"[MeSH] and "Delivery of Health Care/organization and administration"[MeSH] have been removed. These terms do not necessarily align with the core focus of HTA and could lead to the inclusion of unrelated content in the search results. The refined query aims to enhance the precision of the search, narrowing down the results to the most pertinent papers."**

| **Search** | **Actions** | **Details** | **Query** | **Results** | **Time** |
| --- | --- | --- | --- | --- | --- |
| #65 |  |  | Search: **(Health Technology Assessment[Title/Abstract] OR HTA[Title/Abstract] OR Reimbursement Decision\*[Title/Abstract] OR Technology Appraisal[Title/Abstract] OR Technology Evaluation[Title/Abstract] OR "Financing, Government/organization and administration"[MAJR] OR "Financing, Government/standards"[MAJR] OR "Technology Assessment, Biomedical/methods"[MeSH] OR "Technology Assessment, Biomedical/organization and administration"[MeSH] OR "Technology Assessment, Biomedical/economics"[MAJR] OR "Decision Making"[MAJR] OR "Health Priorities"[MAJR] OR "Public Expenditures"[MAJR]) AND (Machine Learning[Title/Abstract] OR Artificial Intelligence[Title/Abstract] OR AI[Title/Abstract] OR Chat-GPT[Title/Abstract] OR ChatGPT[Title/Abstract] OR GPT[Title/Abstract] OR generative AI[Title/Abstract] OR Deep Learning[Title/Abstract] OR Natural Language Processing[Title/Abstract] OR NLP[Title/Abstract] OR Predictive modelling[Title/Abstract] OR Regression[Title/Abstract] OR Predictive Analysis[Title/Abstract] OR Statistical Modelling[Title/Abstract] OR Data Mining[Title/Abstract] OR Decision Trees[Title/Abstract] OR Neural Networks[Title/Abstract] OR Supervised Learning[Title/Abstract] OR Unsupervised Learning[Title/Abstract] OR Clustering[Title/Abstract] OR Component Analysis[Title/Abstract] OR Feature Engineering[Title/Abstract] OR Feature Selection[Title/Abstract] OR Ensemble Methods[Title/Abstract] OR Cross-Validation[Title/Abstract] OR Model Validation[Title/Abstract] OR Convolutional Neural Networks[Title/Abstract] OR CNN[Title/Abstract] OR Recurrent Neural Networks[Title/Abstract] OR RNN[Title/Abstract] OR Long Short-Term Memory Networks[Title/Abstract] OR LSTM[Title/Abstract] OR Reinforcement Learning[Title/Abstract] OR Transfer Learning[Title/Abstract] OR Anomaly Detection[Title/Abstract] OR Hyperparameter Tuning[Title/Abstract] OR Multivariate analys\*[Title/Abstract])** | [6,724](https://pubmed.ncbi.nlm.nih.gov/?term=longqueryadbb26b6bf34bf87b306&sort=) | 12:18:09 |

#To improve the specificity of our search regarding Health Technology Assessment (HTA) and its intersection with machine learning and artificial intelligence methodologies, we've opted to remove broader MeSH terms that could introduce a wider array of unrelated articles. Specifically, the terms "Decision Making"[MAJR] and "Public Expenditures"[MAJR] have been excluded from the query. While these terms can have relevance in broader health economics and policy contexts, their general nature may pull in articles that don't directly address our core research focus on HTA. This refined search aims to increase the precision of our results, highlighting the most relevant publications."

| **Search** | **Actions** | **Details** | **Query** | **Results** | **Time** |
| --- | --- | --- | --- | --- | --- |
| #66 |  |  | Search: **(Health Technology Assessment[Title/Abstract] OR HTA[Title/Abstract] OR Reimbursement Decision\*[Title/Abstract] OR Technology Appraisal[Title/Abstract] OR Technology Evaluation[Title/Abstract] OR "Financing, Government/organization and administration"[MAJR] OR "Financing, Government/standards"[MAJR] OR "Technology Assessment, Biomedical/methods"[MeSH] OR "Technology Assessment, Biomedical/organization and administration"[MeSH] OR "Technology Assessment, Biomedical/economics"[MAJR] OR "Health Priorities"[MAJR]) AND (Machine Learning[Title/Abstract] OR Artificial Intelligence[Title/Abstract] OR AI[Title/Abstract] OR Chat-GPT[Title/Abstract] OR ChatGPT[Title/Abstract] OR GPT[Title/Abstract] OR generative AI[Title/Abstract] OR Deep Learning[Title/Abstract] OR Natural Language Processing[Title/Abstract] OR NLP[Title/Abstract] OR Predictive modelling[Title/Abstract] OR Regression[Title/Abstract] OR Predictive Analysis[Title/Abstract] OR Statistical Modelling[Title/Abstract] OR Data Mining[Title/Abstract] OR Decision Trees[Title/Abstract] OR Neural Networks[Title/Abstract] OR Supervised Learning[Title/Abstract] OR Unsupervised Learning[Title/Abstract] OR Clustering[Title/Abstract] OR Component Analysis[Title/Abstract] OR Feature Engineering[Title/Abstract] OR Feature Selection[Title/Abstract] OR Ensemble Methods[Title/Abstract] OR Cross-Validation[Title/Abstract] OR Model Validation[Title/Abstract] OR Convolutional Neural Networks[Title/Abstract] OR CNN[Title/Abstract] OR Recurrent Neural Networks[Title/Abstract] OR RNN[Title/Abstract] OR Long Short-Term Memory Networks[Title/Abstract] OR LSTM[Title/Abstract] OR Reinforcement Learning[Title/Abstract] OR Transfer Learning[Title/Abstract] OR Anomaly Detection[Title/Abstract] OR Hyperparameter Tuning[Title/Abstract] OR Multivariate analys\*[Title/Abstract])** | [1,690](https://pubmed.ncbi.nlm.nih.gov/?term=longquery066a5e0d37531686f40a&sort=) | 12:23:11 |

#Final Refinement: In our continuing efforts to narrow down the results to the most relevant papers, we have decided to remove the MeSH terms related to "Financing, Government/organization and administration" and "Financing, Government/standards." These terms were likely including articles that focus more on governmental aspects of financing, which are not central to our research on Health Technology Assessment (HTA) and specific methodologies in machine learning and AI. This refinement should lead to a more concentrated set of articles aligned with our study's objectives.

| **search** | **Actions** | **Details** | **Query** | **Results** | **Time** |
| --- | --- | --- | --- | --- | --- |
| #68 |  |  | Search: **(Health Technology Assessment[Title/Abstract] OR HTA[Title/Abstract] OR Reimbursement Decision\*[Title/Abstract] OR Technology Appraisal[Title/Abstract] OR Technology Evaluation[Title/Abstract] OR "Technology Assessment, Biomedical/methods"[MeSH] OR "Technology Assessment, Biomedical/organization and administration"[MeSH] OR "Technology Assessment, Biomedical/economics"[MAJR] OR "Health Priorities"[MAJR]) AND (Machine Learning[Title/Abstract] OR Artificial Intelligence[Title/Abstract] OR AI[Title/Abstract] OR Chat-GPT[Title/Abstract] OR ChatGPT[Title/Abstract] OR GPT[Title/Abstract] OR generative AI[Title/Abstract] OR Deep Learning[Title/Abstract] OR Natural Language Processing[Title/Abstract] OR NLP[Title/Abstract] OR Predictive modelling[Title/Abstract] OR Regression[Title/Abstract] OR Predictive Analysis[Title/Abstract] OR Statistical Modelling[Title/Abstract] OR Data Mining[Title/Abstract] OR Decision Trees[Title/Abstract] OR Neural Networks[Title/Abstract] OR Supervised Learning[Title/Abstract] OR Unsupervised Learning[Title/Abstract] OR Clustering[Title/Abstract] OR Component Analysis[Title/Abstract] OR Feature Engineering[Title/Abstract] OR Feature Selection[Title/Abstract] OR Ensemble Methods[Title/Abstract] OR Cross-Validation[Title/Abstract] OR Model Validation[Title/Abstract] OR Convolutional Neural Networks[Title/Abstract] OR CNN[Title/Abstract] OR Recurrent Neural Networks[Title/Abstract] OR RNN[Title/Abstract] OR Long Short-Term Memory Networks[Title/Abstract] OR LSTM[Title/Abstract] OR Reinforcement Learning[Title/Abstract] OR Transfer Learning[Title/Abstract] OR Anomaly Detection[Title/Abstract] OR Hyperparameter Tuning[Title/Abstract] OR Multivariate analys\*[Title/Abstract])** | [548](https://pubmed.ncbi.nlm.nih.gov/?term=longquery05687b85ecf5e108223b&sort=) | 12:27:45 |

PUBMED search history:



**SCOPUS:**

Search history

Combine queries...e.g. #1 AND NOT #3

Learn more about combining queries (opens in a new window)

History Count Search TermsResultsMenu

57

(TITLE-ABS-KEY((hyperparameter AND tuning) OR (anomaly AND detection) OR (transfer AND learning) OR (reinforcement AND learning) OR (lstm) OR (long AND short-term AND memory AND networks) OR (rnn) OR (recurrent AND neural AND networks) OR (cnn) OR (convolutional AND neural AND networks) OR (model AND validation) OR (cross-validation) OR (ensemble AND methods) OR (feature AND selection) OR (feature AND engineering) OR (component AND analysis) OR (clustering) OR (unsupervised AND learning) OR (supervised AND learning) OR (neural AND networks) OR (decision AND trees) OR (data AND mining) OR (statistical AND modelling) OR (predictive AND analysis) OR (regression) OR (predictive AND modelling) OR (nlp) OR (natural AND language AND processing) OR (deep AND learning) OR (generative AND ai) OR (gpt) OR (chatgpt) OR (chat-gpt) OR (ai) OR (artificial AND intelligence) OR (machine AND learning))) AND ((TITLE-ABS-KEY(Health Technology Assessment)) OR (TITLE-ABS-KEY(HTA)) OR (TITLE-ABS-KEY(Reimbursement Decision\*)) OR (TITLE-ABS-KEY(Technology Appraisal)))

11,011 document results

Set alert Save this search Edit this search Delete this search

56

( TITLE-ABS-KEY ( ( hyperparameter AND tuning ) OR ( anomaly AND detection ) OR ( transfer AND learning ) OR ( reinforcement AND learning ) OR ( lstm ) OR ( long AND short-term AND memory AND networks ) OR ( rnn ) OR ( recurrent AND neural AND networks ) OR ( cnn ) OR ( convolutional AND neural AND networks ) OR ( model AND validation ) OR ( cross-validation ) OR ( ensemble AND methods ) OR ( feature AND selection ) OR ( feature AND engineering ) OR ( component AND analysis ) OR ( clustering ) OR ( unsupervised AND learning ) OR ( supervised AND learning ) OR ( neural AND networks ) OR ( decision AND trees ) OR ( data AND mining ) OR ( statistical AND modelling ) OR ( predictive AND analysis ) OR ( regression ) OR ( predictive AND modelling ) OR ( nlp ) OR ( natural AND language AND processing ) OR ( deep AND learning ) OR ( generative AND ai ) OR ( gpt ) OR ( chatgpt ) OR ( chat-gpt ) OR ( ai ) OR ( artificial AND intelligence ) OR ( machine AND learning ) ) ) AND ( ( TITLE-ABS-KEY ( health AND technology AND assessment ) ) OR ( TITLE-ABS-KEY ( hta ) ) OR ( TITLE-ABS-KEY ( reimbursement AND decision\* ) ) OR ( TITLE-ABS-KEY ( technology AND appraisal ) ) ) ...

11,011 document results

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55

TITLE-ABS-KEY ( ( hyperparameter AND tuning ) OR ( anomaly AND detection ) OR ( transfer AND learning ) OR ( reinforcement AND learning ) OR ( lstm ) OR ( long AND short-term AND memory AND networks ) OR ( rnn ) OR ( recurrent AND neural AND networks ) OR ( cnn ) OR ( convolutional AND neural AND networks ) OR ( model AND validation ) OR ( cross-validation ) OR ( ensemble AND methods ) OR ( feature AND selection ) OR ( feature AND engineering ) OR ( component AND analysis ) OR ( clustering ) OR ( unsupervised AND learning ) OR ( supervised AND learning ) OR ( neural AND networks ) OR ( decision AND trees ) OR ( data AND mining ) OR ( statistical AND modelling ) OR ( predictive AND analysis ) OR ( regression ) OR ( predictive AND modelling ) OR ( nlp ) OR ( natural AND language AND processing ) OR ( deep AND learning ) OR ( generative AND ai ) OR ( gpt ) OR ( chatgpt ) OR ( chat-gpt ) OR ( ai ) OR ( artificial AND intelligence ) OR ( machine AND learning ) ) ...

6,937,260 document results

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54

TITLE-ABS-KEY ( hyperparameter AND tuning )

4,219 document results

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53

TITLE-ABS-KEY ( anomaly AND detection )

59,491 document results

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52

TITLE-ABS-KEY ( transfer AND learning )

96,442 document results

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51

TITLE-ABS-KEY ( reinforcement AND learning )

93,562 document results

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50

TITLE-ABS-KEY ( lstm )

49,005 document results

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49

TITLE-ABS-KEY ( long AND short-term AND memory AND networks )

46,436 document results

Set alert Save this search Edit this search Delete this search

48

TITLE-ABS-KEY ( rnn )

20,352 document results

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47

TITLE-ABS-KEY ( recurrent AND neural AND networks )

56,274 document results

Set alert Save this search Edit this search Delete this search

46

TITLE-ABS-KEY ( cnn )

122,722 document results

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45

TITLE-ABS-KEY ( convolutional AND neural AND networks )

184,666 document results

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44

TITLE-ABS-KEY ( model AND validation )

422,228 document results

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43

TITLE-ABS-KEY ( cross-validation )

79,618 document results

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42

TITLE-ABS-KEY ( ensemble AND methods )

89,332 document results

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41

TITLE-ABS-KEY ( feature AND selection )

193,074 document results

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40

TITLE-ABS-KEY ( feature AND engineering )

167,208 document results

Set alert Save this search Edit this search Delete this search

39

TITLE-ABS-KEY ( component AND analysis )

1,560,903 document results

Set alert Save this search Edit this search Delete this search

38

TITLE-ABS-KEY ( clustering )

434,325 document results

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37

TITLE-ABS-KEY ( unsupervised AND learning )

57,038 document results

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36

TITLE-ABS-KEY ( supervised AND learning )

100,806 document results

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35

TITLE-ABS-KEY ( neural AND networks )

920,433 document results

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34

TITLE-ABS-KEY ( decision AND trees )

146,230 document results

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33

TITLE-ABS-KEY ( data AND mining )

306,090 document results

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32

TITLE-ABS-KEY ( statistical AND modelling )

199,409 document results

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31

TITLE-ABS-KEY ( predictive AND analysis )

486,588 document results

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30

TITLE-ABS-KEY ( regression )

1,912,198 document results

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29

TITLE-ABS-KEY ( predictive AND modelling )

107,156 document results

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28

TITLE-ABS-KEY ( nlp )

33,636 document results

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27

TITLE-ABS-KEY ( natural AND language AND processing )

112,023 document results

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26

TITLE-ABS-KEY ( deep AND learning )

380,673 document results

Set alert Save this search Edit this search Delete this search

25

TITLE-ABS-KEY ( generative AND ai )

1,940 document results

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24

TITLE-ABS-KEY ( gpt )

11,906 document results

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23

TITLE-ABS-KEY ( chatgpt )

1,268 document results

Set alert Save this search Edit this search Delete this search

22

TITLE-ABS-KEY ( chat-gpt )

38 document results

Set alert Save this search Edit this search Delete this search

21

TITLE-ABS-KEY ( ai )

165,067 document results

Set alert Save this search Edit this search Delete this search

20

TITLE-ABS-KEY ( artificial AND intelligence )

504,313 document results

Set alert Save this search Edit this search Delete this search

19

TITLE-ABS-KEY ( machine AND learning )

587,060 document results

Set alert Save this search Edit this search Delete this search

18

( TITLE-ABS-KEY ( health AND technology AND assessment ) ) OR ( TITLE-ABS-KEY ( hta ) ) OR ( TITLE-ABS-KEY ( reimbursement AND decision\* ) ) OR ( TITLE-ABS-KEY ( technology AND appraisal ) )

76,450 document results

Set alert Save this search Edit this search Delete this search

17

TITLE-ABS-KEY ( technology AND appraisal )

8,008 document results

Set alert Save this search Edit this search Delete this search

16

TITLE-ABS-KEY ( reimbursement AND decision\* )

9,441 document results

Set alert Save this search Edit this search Delete this search

15

TITLE-ABS-KEY ( hta )

5,987 document results

Set alert Save this search Edit this search Delete this search

14

TITLE-ABS-KEY ( health AND technology AND assessment )

58,416 document results

Set alert Save this search Edit this search

#The original search yielded a broad result set with over 11,011 documents, which suggests that the search might have captured many irrelevant documents. One reason for this is that specific phrases, such as "health technology assessment" or "machine learning", were broken down into individual keywords, leading to Scopus returning documents that contain these words in any order or context. By enclosing these phrases in quotations, we've directed Scopus to search for the exact phrases. This method increases the specificity of our search and should provide a more refined and relevant set of results.

(TITLE-ABS-KEY(("hyperparameter tuning") OR ("anomaly detection") OR ("transfer learning") OR ("reinforcement learning") OR (lstm) OR ("long short-term memory networks") OR (rnn) OR ("recurrent neural networks") OR (cnn) OR ("convolutional neural networks") OR ("model validation") OR ("cross-validation") OR ("ensemble methods") OR ("feature selection") OR ("feature engineering") OR ("component analysis") OR (clustering) OR ("unsupervised learning") OR ("supervised learning") OR ("neural networks") OR ("decision trees") OR ("data mining") OR ("statistical modelling") OR ("predictive analysis") OR (regression) OR ("predictive modelling") OR (nlp) OR ("natural language processing") OR ("deep learning") OR ("generative ai") OR (gpt) OR (chatgpt) OR ("chat-gpt") OR (ai) OR ("artificial intelligence") OR ("machine learning"))) AND ((TITLE-ABS-KEY("Health Technology Assessment")) OR (TITLE-ABS-KEY(HTA)) OR (TITLE-ABS-KEY("Reimbursement Decision\*")) OR (TITLE-ABS-KEY("Technology Appraisal")) OR (TITLE-ABS-KEY("Technology Evaluation")))

[776 documents](https://www.scopus.com/results/results.uri?sort=plf-f&src=s&sid=564bf72e5e6f0160abc465a0718a14b6&sot=a&sdt=a&sl=1043&s=%28TITLE-ABS-KEY%28%28%22hyperparameter+tuning%22%29+OR+%28%22anomaly+detection%22%29+OR+%28%22transfer+learning%22%29+OR+%28%22reinforcement+learning%22%29+OR+%28lstm%29+OR+%28%22long+short-term+memory+networks%22%29+OR+%28rnn%29+OR+%28%22recurrent+neural+networks%22%29+OR+%28cnn%29+OR+%28%22convolutional+neural+networks%22%29+OR+%28%22model+validation%22%29+OR+%28%22cross-validation%22%29+OR+%28%22ensemble+methods%22%29+OR+%28%22feature+selection%22%29+OR+%28%22feature+engineering%22%29+OR+%28%22component+analysis%22%29+OR+%28clustering%29+OR+%28%22unsupervised+learning%22%29+OR+%28%22supervised+learning%22%29+OR+%28%22neural+networks%22%29+OR+%28%22decision+trees%22%29+OR+%28%22data+mining%22%29+OR+%28%22statistical+modelling%22%29+OR+%28%22predictive+analysis%22%29+OR+%28regression%29+OR+%28%22predictive+modelling%22%29+OR+%28nlp%29+OR+%28%22natural+language+processing%22%29+OR+%28%22deep+learning%22%29+OR+%28%22generative+ai%22%29+OR+%28gpt%29+OR+%28chatgpt%29+OR+%28%22chat-gpt%22%29+OR+%28ai%29+OR+%28%22artificial+intelligence%22%29+OR+%28%22machine+learning%22%29%29%29+AND+%28%28TITLE-ABS-KEY%28%22Health+Technology+Assessment%22%29%29+OR+%28TITLE-ABS-KEY%28HTA%29%29+OR+%28TITLE-ABS-KEY%28%22Reimbursement+Decision*%22%29%29+OR+%28TITLE-ABS-KEY%28%22Technology+Appraisal%22%29%29+OR+%28TITLE-ABS-KEY%28%22Technology+Evaluation%22%29%29%29&origin=searchadvanced&editSaveSearch=&txGid=1cc1a9de6de45e727821d1b8623c5968&sessionSearchId=564bf72e5e6f0160abc465a0718a14b6&limit=10)

|  |  |
| --- | --- |
| [633 document results](https://www.scopus.com/search/history/results.uri?origin=searchhistory&shid=58) |  |

**EMBASE:**

Embase <1996 to 2023 August 11>

1 exp machine learning/ 400798

2 Machine Learning.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 132147

3 Artificial Intelligence.mp. or exp artificial intelligence/ 89984

4 AI.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 59019

5 chatbot/ or Chat-GPT.mp. 587

6 ChatGPT.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 834

7 GPT.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 4111

8 generative AI.mp. 63

9 Deep Learning.mp. or deep learning/ 60769

10 Natural Language Processing.mp. or exp natural language processing/ 12278

11 NLP.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 4893

12 Predictive modelling.mp. or exp predictive model/ 10760

13 exp nonlinear regression analysis/ or exp regression discontinuity design/ or exp multinomial logistic regression/ or exp partial least squares regression/ or exp principal component regression/ or exp linear regression analysis/ or exp regression model/ or exp Poisson regression/ or exp geographically weighted regression/ or exp multiple regression/ or exp generalized regression neural network/ or Regression.mp. or exp quantile regression/ or ridge regression/ or exp negative binomial regression/ 1564407

14 Predictive Analysis.mp. 1091

15 exp statistical model/ or exp prediction/ or Statistical Modelling.mp. 1122977

16 Data Mining.mp. or exp data mining/ or exp data analysis/ 218700

17 Decision Trees.mp. or exp "decision tree"/ 22179

18 Decision Trees.mp. or exp "decision tree"/ 22179

19 exp nerve cell network/ or exp artificial neural network/ or Neural Networks.mp. or exp convolutional neural network/ 181889

20 exp supervised machine learning/ or Supervised Learning.mp. 9489

21 exp unsupervised machine learning/ or Unsupervised Learning.mp. 4942

22 exp hierarchical clustering/ or Clustering.mp. or exp clustering algorithm/ or exp k means clustering/ 127795

23 exp principal component analysis/ or exp independent component analysis/ or Component Analysis.mp. 101836

24 exp support vector machine/ or Feature Engineering.mp. 39965

25 Feature Selection.mp. or feature selection/ 17714

26 Ensemble Methods.mp. 670

27 Cross-Validation.mp. or exp cross validation/ 44464

28 Model Validation.mp. 4588

29 Convolutional Neural Networks.mp. or exp convolutional neural network/ 28943

30 CNN.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 18261

31 Recurrent Neural Networks.mp. or exp recurrent neural network/ 6873

32 RNN.mp. 1884

33 Long Short-Term Memory Networks.mp. or exp long short term memory network/ 2408

34 LSTM.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 4255

35 Reinforcement Learning.mp. 6914

36 Transfer Learning.mp. 5378

37 Anomaly Detection.mp. or exp outlier detection/ 1887

38 Hyperparameter Tuning.mp. 422

39 Health Technology Assessment.mp. or exp biomedical technology assessment/ 19507

40 HTA.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 9341

41 exp biomedical technology assessment/ or exp reimbursement/ or Reimbursement Decision$.mp. or exp decision making/ 502620

42 Technology Appraisal.mp. 837

43 Technology Evaluation.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 486

44 \*"medical decision making"/ 9335

45 \*"decision making"/ 58979

46 \*"funding"/ 5407

47 "reimbursement"/ 58222

48 \*"biomedical technology assessment"/ 4681

49 "funding"/ 75754

50 \*"medical decision making"/ 9335

51 \*"stated preference"/ 2

52 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 580187

53 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 2883336

54 52 and 53 71262

#The results were too broad, having 71,262 documents. Skimming through the results, one first observation is irrelevant results that belong to the decision making, which goes beyond medical decision making, and thus will be the first one to be removed. The removal of this term, resulted in the same exact number of results for the population search, indicating that “exploding” these terms potentially results in the same pool of documents. Identifying that funding is the only group that has more documents than decision making, and thus is the only group that could completely engulf it, it was also removed as a second step.

#removal of funding, indeed, resulted in a lower number of relevant papers, but not dramatically; redoing the full combination with the prediction terms results in a slight reduction of total papers, to 64,093.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 55 | 39 or 40 or 41 or 42 or 43 or 44 or 46 or 48 or 49 or 50 or 51 | 580187 | Advanced | [Display Results](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&SELECT=S.sh%7c&R=55&Process+Action=display)  [More](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi) |  |
|  | 56 | 39 or 40 or 41 or 42 or 43 or 44 or 46 or 47 or 48 or 50 or 51 | 515512 | Advanced | [Display Results](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&SELECT=S.sh%7c&R=56&Process+Action=display)  [More](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi) |  |
|  | 57 | 53 and 56 | 64093 | Advanced | [Display Results](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&SELECT=S.sh%7c&R=57&Process+Action=display)  [More](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi) |  |

#Consequently, a further removal of broad terms was explored, removing reimbursement and the broad funding subject heading term; the focused funding term that was identified from a relevant paper was kept, alongside the stated preference subject heading of the same paper, and the specific HTA terms.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 59 | 53 and 58 | 2017 | Advanced | [Display Results](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi?&S=NBFMFPJIHMACFCKNKPLJJEPMLBJGAA00&SELECT=S.sh%7c&R=59&Process+Action=display)  [More](https://ovidsp.dc1.ovid.com/ovid-b/ovidweb.cgi) |  |

#Skimming through the list, and also taking into consideration the 1,000 threshold, there seems to be room for improvement, seeing the subject heading of medical decision making includes non-relevant clinical decision making, decreasing dramatically, at a first glance, specificity. Consequently, this subject heading was also removed.

#the final removal of this subject heading resulted in 850 papers which is deemed acceptable, especially taking into consideration the retention of the HTA subject headings and the key word searching, while also keeping the focused funding subject heading.

Embase <1996 to 2023 August 11>

1 exp machine learning/ 400798

2 Machine Learning.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 132147

3 Artificial Intelligence.mp. or exp artificial intelligence/ 89984

4 AI.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 59019

5 chatbot/ or Chat-GPT.mp. 587

6 ChatGPT.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 834

7 GPT.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 4111

8 generative AI.mp. 63

9 Deep Learning.mp. or deep learning/ 60769

10 Natural Language Processing.mp. or exp natural language processing/ 12278

11 NLP.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 4893

12 Predictive modelling.mp. or exp predictive model/ 10760

13 exp nonlinear regression analysis/ or exp regression discontinuity design/ or exp multinomial logistic regression/ or exp partial least squares regression/ or exp principal component regression/ or exp linear regression analysis/ or exp regression model/ or exp Poisson regression/ or exp geographically weighted regression/ or exp multiple regression/ or exp generalized regression neural network/ or Regression.mp. or exp quantile regression/ or ridge regression/ or exp negative binomial regression/ 1564407

14 Predictive Analysis.mp. 1091

15 exp statistical model/ or exp prediction/ or Statistical Modelling.mp. 1122977

16 Data Mining.mp. or exp data mining/ or exp data analysis/ 218700

17 Decision Trees.mp. or exp "decision tree"/ 22179

18 Decision Trees.mp. or exp "decision tree"/ 22179

19 exp nerve cell network/ or exp artificial neural network/ or Neural Networks.mp. or exp convolutional neural network/ 181889

20 exp supervised machine learning/ or Supervised Learning.mp. 9489

21 exp unsupervised machine learning/ or Unsupervised Learning.mp. 4942

22 exp hierarchical clustering/ or Clustering.mp. or exp clustering algorithm/ or exp k means clustering/ 127795

23 exp principal component analysis/ or exp independent component analysis/ or Component Analysis.mp. 101836

24 exp support vector machine/ or Feature Engineering.mp. 39965

25 Feature Selection.mp. or feature selection/ 17714

26 Ensemble Methods.mp. 670

27 Cross-Validation.mp. or exp cross validation/ 44464

28 Model Validation.mp. 4588

29 Convolutional Neural Networks.mp. or exp convolutional neural network/ 28943

30 CNN.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 18261

31 Recurrent Neural Networks.mp. or exp recurrent neural network/ 6873

32 RNN.mp. 1884

33 Long Short-Term Memory Networks.mp. or exp long short term memory network/ 2408

34 LSTM.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 4255

35 Reinforcement Learning.mp. 6914

36 Transfer Learning.mp. 5378

37 Anomaly Detection.mp. or exp outlier detection/ 1887

38 Hyperparameter Tuning.mp. 422

39 Health Technology Assessment.mp. or exp biomedical technology assessment/ 19507

40 HTA.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 9341

41 exp biomedical technology assessment/ or exp reimbursement/ or Reimbursement Decision$.mp. or exp decision making/ 502620

42 Technology Appraisal.mp. 837

43 Technology Evaluation.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] 486

44 \*"medical decision making"/ 9335

45 \*"decision making"/ 58979

46 \*"funding"/ 5407

47 "reimbursement"/ 58222

48 \*"biomedical technology assessment"/ 4681

49 "funding"/ 75754

50 \*"medical decision making"/ 9335

51 \*"stated preference"/ 2

52 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 580187

53 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 2883336

54 52 and 53 71262

55 39 or 40 or 41 or 42 or 43 or 44 or 46 or 48 or 49 or 50 or 51 580187

56 39 or 40 or 41 or 42 or 43 or 44 or 46 or 47 or 48 or 50 or 51 515512

57 53 and 56 64093

58 42 or 43 or 44 or 46 or 48 or 50 or 51 20628

59 53 and 58 2017

60 42 or 43 or 46 or 48 or 51 11317

61 53 and 60 850

**Arxiv**

<https://arxiv.org/search/advanced?advanced=&terms-0-operator=AND&terms-0-term=%22Health+Technology+Assessment%22&terms-0-field=all&terms-1-operator=OR&terms-1-term=HTA&terms-1-field=all&terms-2-operator=OR&terms-2-term=Reimbursement+Decision%24&terms-2-field=all&terms-3-operator=OR&terms-3-term=%22Technology+Appraisal%22&terms-3-field=all&terms-4-operator=OR&terms-4-term=%22Technology+Evaluation%22&terms-4-field=all&classification-physics_archives=all&classification-include_cross_list=include&date-filter_by=all_dates&date-year=&date-from_date=&date-to_date=&date-date_type=submitted_date&abstracts=show&size=50&order=-announced_date_first>

#Due to the constraints inherent in Arxiv's advanced search functionality, and considering its specialization in Data Science, Mathematics, Statistics, and Computer Science, we tailored our search strategy to include only the population terms, scanning all fields of the paper. This focused approach led to the identification **of 50 relevant papers**, representing a highly targeted selection within the domains of interest. The limitation in the search capabilities necessitated this strategy, ensuring that the resulting dataset is closely aligned with the research objectives.

IEEE XPLORE

# Showing 1-25 of 1,786 results for

# ("All Metadata":"Health Technology Assessment") OR ("All Metadata":HTA) OR ("All Metadata":"Reimbursement Decision") OR ("All Metadata":"Reimbursement Decisions") OR ("All Metadata":"Technology Appraisal") OR ("All Metadata":"Technology Evaluation")

# Showing 1-25 of 907,379 resultsfor

# (("All Metadata":"Machine Learning") OR ("All Metadata":"Artificial Intelligence") OR ("All Metadata":"AI") OR ("All Metadata":"Chat-GPT") OR ("All Metadata":"ChatGPT") OR ("All Metadata":"GPT") OR ("All Metadata":"generative AI") OR ("All Metadata":"Deep Learning") OR ("All Metadata":"Natural Language Processing") OR ("All Metadata":"NLP") OR ("All Metadata":"Predictive modelling") OR ("All Metadata":"Regression") OR ("All Metadata":"Predictive Analysis") OR ("All Metadata":"Statistical Modelling") OR ("All Metadata":"Data Mining") OR ("All Metadata":"Decision Trees") OR ("All Metadata":"Neural Networks") OR ("All Metadata":"Supervised Learning") OR ("All Metadata":"Unsupervised Learning") OR ("All Metadata":"Clustering") OR ("All Metadata":"Component Analysis") OR ("All Metadata":"Feature Engineering") OR ("All Metadata":"Feature Selection") OR ("All Metadata":"Ensemble Methods") OR ("All Metadata":"Cross-Validation") OR ("All Metadata":"Model Validation") OR ("All Metadata":"Convolutional Neural Networks") OR ("All Metadata":"CNN") OR ("All Metadata":"Recurrent Neural Networks") OR ("All Metadata":"RNN") OR ("All Metadata":"Long Short-Term Memory Networks") OR ("All Metadata":"LSTM") OR ("All Metadata":"Reinforcement Learning") OR ("All Metadata":"Transfer Learning") OR ("All Metadata":"Anomaly Detection") OR ("All Metadata":"Hyperparameter Tuning") )

# Showing 1-25 of 1,763 results for

# ( (("All Metadata":"Machine Learning") OR ("All Metadata":"Artificial Intelligence") OR ("All Metadata":"AI") OR ("All Metadata":"Chat-GPT") OR ("All Metadata":"ChatGPT") OR ("All Metadata":"GPT") OR ("All Metadata":"Deep Learning") OR ("All Metadata":"Natural Language Processing") OR ("All Metadata":"NLP") OR ("All Metadata":"Predictive Modelling") OR ("All Metadata":"Regression") OR ("All Metadata":"Predictive Analysis") OR ("All Metadata":"Statistical Modelling") OR ("All Metadata":"Data Mining") OR ("All Metadata":"Decision Trees") OR ("All Metadata":"Neural Networks") OR ("All Metadata":"Supervised Learning") OR ("All Metadata":"Unsupervised Learning") OR ("All Metadata":"Clustering") OR ("All Metadata":"Component Analysis") OR ("All Metadata":"Feature Engineering") OR ("All Metadata":"Feature Selection") OR ("All Metadata":"Ensemble Methods") OR ("All Metadata":"Cross-Validation") OR ("All Metadata":"Model Validation")) AND ("All Metadata":"Health Technology Assessment") OR ("All Metadata":HTA) OR ("All Metadata":"Reimbursement Decision") OR ("All Metadata":"Reimbursement Decisions") OR ("All Metadata":"Technology Appraisal") OR ("All Metadata":"Technology Evaluation") )

#due to the specialised nature of the database, skimming through the results, we identified that the results of the combine search brought the same number of the results with the search only of the population parameters, and that increased specificity can be achieved by specifying that general field of research should concern health, filtering many irrelevant evaluations. The added words representing health and life sciences were the following:

Health OR Healthcare OR Life Sciences OR Medical OR Clinical OR Pharmaceutical OR Biomedical OR Patient OR Therapeutics OR Diagnostics OR Epidemiology

# Showing 1-25 of 38 results for

# (((("All Metadata":"Machine Learning") OR ("All Metadata":"Artificial Intelligence") OR ("All Metadata":"AI") OR ("All Metadata":"Chat-GPT") OR ("All Metadata":"ChatGPT") OR ("All Metadata":"GPT") OR ("All Metadata":"Deep Learning") OR ("All Metadata":"Natural Language Processing") OR ("All Metadata":"NLP") OR ("All Metadata":"Predictive Modelling") OR ("All Metadata":"Regression") OR ("All Metadata":"Predictive Analysis") OR ("All Metadata":"Statistical Modelling") OR ("All Metadata":"Data Mining") OR ("All Metadata":"Decision Trees") OR ("All Metadata":"Neural Networks") OR ("All Metadata":"Supervised Learning") OR ("All Metadata":"Unsupervised Learning") OR ("All Metadata":"Clustering") OR ("All Metadata":"Component Analysis") OR ("All Metadata":"Feature Engineering") OR ("All Metadata":"Feature Selection") OR ("All Metadata":"Ensemble Methods") OR ("All Metadata":"Cross-Validation") OR ("All Metadata":"Model Validation")) AND (("All Metadata":"Health Technology Assessment") OR ("All Metadata":HTA) OR ("All Metadata":"Reimbursement Decision") OR ("All Metadata":"Reimbursement Decisions") OR ("All Metadata":"Technology Appraisal") OR ("All Metadata":"Technology Evaluation")) AND ("All Metadata":Health OR "All Metadata":Healthcare OR "All Metadata":"Life Sciences" OR "All Metadata":Medical OR "All Metadata":"Clinical" OR "All Metadata":"Pharmaceutical" OR "All Metadata":"Biomedical" OR "All Metadata":Patient OR "All Metadata":"Therapeutics" OR "All Metadata":"Diagnostics" OR "All Metadata":"Epidemiology")) )

("All Metadata":"Health Technology Assessment") OR ("All Metadata":"Reimbursement Decision") OR ("All Metadata":"Reimbursement Decisions") OR ("All Metadata":"Medical Technology Appraisal") OR ("All Metadata":"Medical Technology Evaluation")

**53 results**

After duplicates removal: 53+38 -> 83

**VALUE IN HEALTH**

Population :   
  
(Health Technology Assessment) OR (HTA) OR (Reimbursement Decision\*) OR (Technology Appraisal) OR (Technology Evaluation)

Intervention:   
  
(Machine Learning) OR (Artificial Intelligence) OR (AI) OR (Chat-GPT) OR (ChatGPT) OR (GPT) OR (generative AI) OR (Deep Learning) OR (Natural Language Processing) OR (NLP) OR (Predictive modelling) OR (Regression) OR (Predictive Analysis) OR (Statistical Modelling) OR (Data Mining) OR (Decision Trees) OR (Neural Networks) OR (Supervised Learning) OR (Unsupervised Learning) OR (Clustering) OR (Component Analysis) OR (Feature Engineering) OR (Feature Selection) OR (Ensemble Methods) OR (Cross-Validation) OR (Model Validation) OR (Convolutional Neural Networks) OR (CNN) OR (Recurrent Neural Networks) OR (RNN) OR (Long Short-Term Memory Networks) OR (LSTM) OR (Reinforcement Learning) OR (Transfer Learning) OR (Anomaly Detection) OR (Hyperparameter Tuning)

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* [Machine learning](https://www.cambridge.org/core/journals/international-journal-of-technology-assessment-in-health-care/listing?q=Machine+learning&searchWithinIds=5A33AA41BC24DE8673ABFB7AF1B91C58&fts=no): 165
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* [GPT](https://www.cambridge.org/core/journals/international-journal-of-technology-assessment-in-health-care/listing?q=GPT&searchWithinIds=5A33AA41BC24DE8673ABFB7AF1B91C58&fts=no): 0
* [Regression](https://www.cambridge.org/core/journals/international-journal-of-technology-assessment-in-health-care/listing?q=Regression&aggs%5BproductSociety%5D%5Bfilters%5D=BE449C93740A618ED13AA9406C48B8EE&fts=no&searchWithinIds=5A33AA41BC24DE8673ABFB7AF1B91C58): 149

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