**Online Resource 1.** Detailed Search Queries

PubMed History September 13, 2019

| Search | PubMed Query – September 13, 2019 | Items found |
|---|---|---|
| #5 | #4 NOT (("Adolescent"[Mesh] OR "Child"[Mesh] OR "Infant"[Mesh] OR adolescen*[tiab] OR child*[tiab] OR schoolchild*[tiab] OR infant*[tiab] OR girl*[tiab] OR boy*[tiab] OR teen[tiab] OR teens[tiab] OR teenager*[tiab] OR youth*[tiab] OR pediatr*[tiab] OR paediatr*[tiab] OR puber*[tiab]) NOT ("Adult"[Mesh] OR adult*[tiab] OR man[tiab] OR men[tiab] OR woman[tiab] OR women[tiab])) NOT (animals[mh] NOT humans[mh]) | 1658 |
| #4 | #1 AND #2 AND #3 | 2052 |
| #3 | "Diagnosis, Computer-Assisted"[Mesh] OR "Early Diagnosis"[Mesh:NoExp] OR predict*[tiab] OR detect*[tiab] OR identif*[tiab] OR early diagnos*[tiab] | 5854095 |
| #2 | "Systemic Inflammatory Response Syndrome"[Mesh] OR "Bacteremia"[Mesh] OR "Sepsis"[Mesh] OR "Shock, Septic"[Mesh] OR sepsis[tiab] OR bacteraemia*[tiab] OR bacteremia*[tiab] OR septic[tiab] OR systemic inflammatory response syndrome[tiab] OR SIRS[tiab] OR septicemia*[tiab] OR SOFA[tiab] OR sequential organ failure assessment[tiab] OR qSOFA[tiab] | 220148 |
| #1 | "Algorithms"[Mesh] OR "Artificial Intelligence"[Mesh] OR "Decision trees"[MeSH] OR "Decision Support Systems, Clinical"[Mesh] OR "Decision Making, Computer-Assisted"[Mesh] OR "Decision Support Techniques"[Mesh] OR "Decision Support Systems, Clinical"[Mesh] OR machine learning[tiab] OR prediction algorithm*[tiab] OR prediction model*[tiab] OR neural network*[tiab] OR deep learning[tiab] OR artificial intelligence[tiab] OR AI[tiab] OR decision tree*[tiab] OR computational intelligence[tiab] OR machine intelligence[tiab] OR algorithm*[tiab] OR big data[tiab] OR bayesian[tiab] OR naïve bayes[tiab] OR k-nearest neighbour[tiab] OR decision support[tiab] OR random forest[tiab] OR support vector machine[tiab] OR SVM[tiab] OR Xgboost[tiab] OR adaboost[tiab] OR gradient boosting machine*[tiab] OR regression tree*[tiab] OR least squares[tiab] OR stepwise regression[tiab] | 7733737 |

Embase.com History September 13, 2019

| Search | Embase.com Query – September 13, 2019 | Items found |
|---|---|---|
| #8 | #6 NOT 'conference abstract'/it | 1524 |
| #7 | #6 AND 'conference abstract'/it | 836 |
| #5 | #4 NOT (('adolescent'/exp OR 'child'/exp OR adolescent*:ti,ab OR child*:ti,ab OR schoolchild*:ti,ab OR infant*:ti,ab OR girl*:ti,ab OR boy*:ti,ab OR teen:ti,ab OR teens:ti,ab OR teenager*:ti,ab OR youth*:ti,ab OR pediatr*:ti,ab OR paediatr*:ti,ab OR puber*:ti,ab ) NOT ('adult'/exp OR 'aged'/exp OR 'middle aged'/exp OR adult*:ti,ab OR man:ti,ab OR men:ti,ab OR woman:ti,ab OR women:ti,ab)) NOT ([animals]/lim NOT [humans]/lim) | 2360 |
| #4 | #1 AND #2 AND #3 | 2862 |
| #3 | 'computer assisted diagnosis'/exp OR 'early diagnosis'/exp OR 'prediction'/exp OR predict*:ab,ti,kw OR detect*:ab,ti,kw OR identif*:ab,ti,kw OR 'early diagnos*':ab,ti,kw | 8340370 |

| Search | Embase.com Query – September 13, 2019 | Items found |
|---|---|---|
| #2 | 'systemic inflammatory response syndrome'/exp OR 'sepsis'/exp OR sepsis:ab,ti,kw OR bacteraemia*:ab,ti,kw OR bacteremia*:ab,ti,kw OR septic:ab,ti,kw OR 'Systemic inflammatory response syndrome':ab,ti,kw OR SIRS:ab,ti,kw OR septicemia*:ab,ti,kw OR SOFA:ab,ti,kw OR 'Sequential Organ Failure Assessment':ab,ti,kw OR qSOFA:ab,ti,kw | 340327 |
| #1 | 'computer prediction'/exp OR 'decision tree'/exp OR 'machine learning'/exp OR 'neural network'/exp OR 'machine learning':ab,ti,kw OR 'prediction algorithm*':ab,ti,kw OR 'prediction model*':ab,ti,kw OR 'neural network*':ab,ti,kw OR 'deep learning':ab,ti,kw OR 'artificial intelligence':ab,ti,kw OR AI:ab,ti,kw OR 'decision tree*':ab,ti,kw OR 'computational intelligence':ab,ti,kw OR 'machine intelligence':ab,ti,kw OR algorithm*:ab,ti,kw OR 'big data':ab,ti,kw OR bayesian:ab,ti,kw OR 'naïve bayes':ab,ti,kw OR 'k-nearest neighbour':ab,ti,kw OR 'decision support':ab,ti,kw OR 'random forest':ab,ti,kw OR 'support vector machine':ab,ti,kw OR SVM:ab,ti,kw OR Xgboost:ab,ti,kw OR adaboost:ab,ti,kw OR 'gradient boosting machine*':ab,ti,kw OR 'regression tree*':ab,ti,kw OR 'least squares':ab,ti,kw OR 'stepwise regression':ab,ti,kw | 604212 |

Scopus History September 13, 2019

| Search | Scopus Query -  September 13, 2019 | Items found |
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| #7 | ( ( TITLE-ABS-KEY ( "machine learning" OR "prediction algorithm*" OR "prediction model*" OR "neural network*" OR "deep learning" OR "artificial intelligence" OR {AI} OR "decision tree*" OR "computational intelligence" OR "machine intelligence" OR algorithm* OR "big data" OR bayesian OR "naïve bayes" OR "k-nearest neighbour" OR "decision support" OR "random forest" OR "support vector machine" OR {SVM} OR xgboost OR adaboost OR "gradient boosting machine*" OR "regression tree*" OR "least squares" OR "stepwise regression" ) ) AND ( TITLE-ABS-KEY ( sepsis OR bacteraemia* OR bacteremia* OR septic OR "Systemic inflammatory response syndrome" OR {SIRS} OR septicemia* OR {SOFA} OR "Sequential Organ Failure Assessment" OR {Qsofa} ) ) AND ( TITLE-ABS-KEY ( prediction OR predict* OR detect* OR identif* OR "early diagnos*" ) ) ) AND NOT ( ( TITLE-ABS-KEY ( adolescent* OR child* OR schoolchild* OR infant* OR girl* OR boy* OR teen OR teens OR teenager* OR youth* OR pediatr* OR paediatr* OR puber* ) AND NOT TITLE-ABS-KEY ( adult* OR man OR men OR woman OR women ) ) ) AND ( EXCLUDE ( DOCTYPE , "ed" ) OR EXCLUDE ( DOCTYPE , "cr" ) OR EXCLUDE ( DOCTYPE , "ch" ) OR EXCLUDE ( DOCTYPE , "le" ) OR EXCLUDE ( DOCTYPE , "no" ) OR EXCLUDE ( DOCTYPE , "sh" ) ) | 2089 |
| #6 | #4 AND NOT #5 | 2217 |
| #5 | (TITLE-ABS-KEY (adolescent* OR child* OR schoolchild* OR infant* OR girl* OR boy* OR teen OR teens OR teenager* OR youth* OR pediatr* OR paediatr* OR puber* ) AND NOT TITLE-ABS-KEY (adult* OR man OR men OR woman OR women)) | 2762112 |
| #4 | #1 AND #2 AND #3 | 2597 |
| #3 | TITLE-ABS-KEY (prediction OR predict* OR detect* OR identif* OR "early diagnos*") | 12853324 |
| #2 | TITLE-ABS-KEY (sepsis OR bacteraemia* OR bacteremia* OR septic OR "Systemic inflammatory response syndrome" OR {SIRS} OR septicemia* OR {SOFA} OR "Sequential Organ Failure Assessment" OR {Qsofa}) | 297517 |
| #1 | TITLE-ABS-KEY("machine learning"  OR "prediction algorithm*" OR "prediction model*" OR "neural network*" OR "deep learning" OR "artificial intelligence" OR {AI} | 3945771 |

| Search | Scopus Query -  September 13, 2019 | Items found |
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| | OR "decision tree*" OR "computational intelligence" OR "machine intelligence" OR algorithm* OR "big data" OR bayesian OR "naïve bayes" OR "k-nearest neighbour" OR "decision support" OR "random forest" OR "support vector machine" OR {SVM} OR Xgboost OR adaboost OR "gradient boosting machine*" OR "regression tree*" OR "least squares" OR "stepwise regression") | |