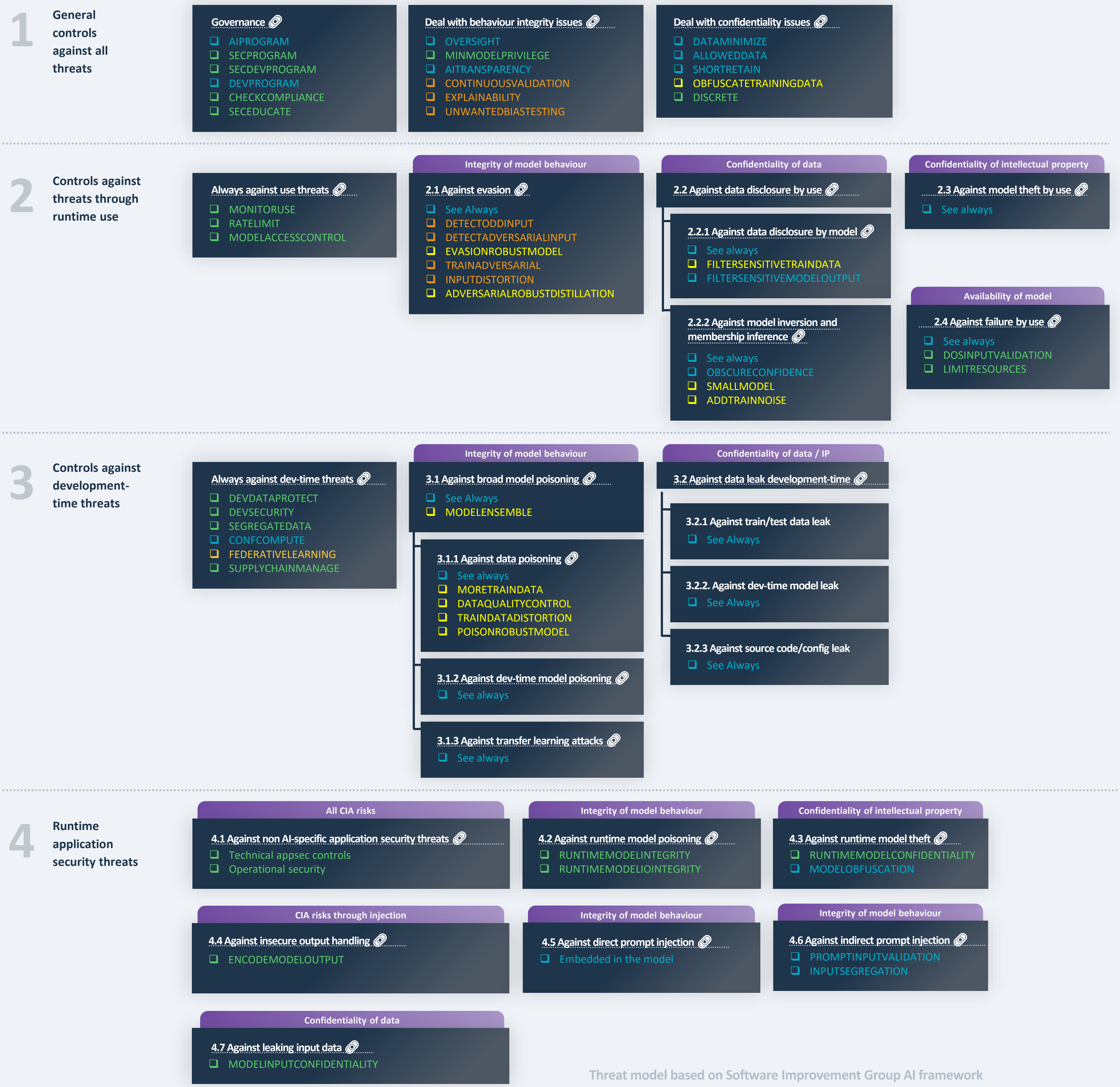
AI security threats and controls navigator from the OWASP AI Exchange at owaspai.org

LEGEND: Group of controls, by threat or type (clickable) | Impact on Confidentiality, Integrity or Availability

Standard information security CONTROL (with attention points) | Runtime Data science CONTROL | Development-time Data science CONTROL | Other CONTROL



1 General controls against all threats

Governance
- □ AIPROGRAM
- □ SECPROGRAM
- □ SECDEVPROGRAM
- □ DEVPROGRAM
- □ CHECKCOMPLIANCE
- □ SECEDUCATE

Deal with behaviour integrity issues
- □ OVERSIGHT
- □ MINMODELPRIVILEGE
- □ AITRANSPARENCY
- □ CONTINUOUSVALIDATION
- □ EXPLAINABILITY
- □ UNWANTEDBIASTESTING

Deal with confidentiality issues
- □ DATAMINIMIZE
- □ ALLOWEDDATA
- □ SHORTRETAIN
- □ OBFUSCATETRAININGDATA
- □ DISCRETE

2 Controls against threats through runtime use

Always against use threats
- □ MONITORUSE
- □ RATELIMIT
- □ MODELACCESSCONTROL

Integrity of model behaviour

2.1 Against evasion
- □ See Always
- □ DETECTODDINPUT
- □ DETECTADVERSARIALINPUT
- □ EVASIONROBUSTMODEL
- □ TRAINADVERSARIAL
- □ INPUTDISTORTION
- □ ADVERSARIALROBUSTDISTILLATION

Confidentiality of data

2.2 Against data disclosure by use

2.2.1 Against data disclosure by model
- □ See always
- □ FILTERSENSITIVETRAINDATA
- □ FILTERSENSITIVEMODELOUTPUT

2.2.2 Against model inversion and membership inference
- □ See always
- □ OBSCURECONFIDENCE
- □ SMALLMODEL
- □ ADDTRAINNOISE

Confidentiality of intellectual property

2.3 Against model theft by use
- □ See always

Availability of model

2.4 Against failure by use
- □ See always
- □ DOSINPUTVALIDATION
- □ LIMITRESOURCES

3 Controls against development-time threats

Always against dev-time threats
- □ DEVDATAPROTECT
- □ DEVSECURITY
- □ SEGREGATEDATA
- □ CONFCOMPUTE
- □ FEDERATIVELEARNING
- □ SUPPLYCHAINMANAGE

Integrity of model behaviour

3.1 Against broad model poisoning
- □ See Always
- □ MODELENSEMBLE

3.1.1 Against data poisoning
- □ See always
- □ MORETRAINDATA
- □ DATAQUALITYCONTROL
- □ TRAINDATADISTORTION
- □ POISONROBUSTMODEL

3.1.2 Against dev-time model poisoning
- □ See always

3.1.3 Against transfer learning attacks
- □ See always

Confidentiality of data / IP

3.2 Against data leak development-time

3.2.1 Against train/test data leak
- □ See Always

3.2.2. Against dev-time model leak
- □ See Always

3.2.3 Against source code/config leak
- □ See Always

4 Runtime application security threats

All CIA risks

4.1 Against non AI-specific application security threats
- □ Technical appsec controls
- □ Operational security

Integrity of model behaviour

4.2 Against runtime model poisoning
- □ RUNTIMEMODELINTEGRITY
- □ RUNTIMEMODELIOINTEGRITY

Confidentiality of intellectual property

4.3 Against runtime model theft
- □ RUNTIMEMODELCONFIDENTIALITY
- □ MODELOBFUSCATION

CIA risks through injection

4.4 Against insecure output handling
- □ ENCODEMODELOUTPUT

Integrity of model behaviour

4.5 Against direct prompt injection
- □ Embedded in the model

Integrity of model behaviour

4.6 Against indirect prompt injection
- □ PROMPTINPUTVALIDATION
- □ INPUTSEGREGATION

Confidentiality of data

4.7 Against leaking input data
- □ MODELINPUTCONFIDENTIALITY

Threat model based on Software Improvement Group AI framework