**AI – CSP, definitions and modelling**

CSP algos take advantage of the structure of states, with the aim of identifying the value/variable combinations that **violate** the constraints

Text, letter

Description automatically generatedWe can therefore define:

Where:

* A domain is the set of admittable values
* A constraint is a pair **<scope, relation>**
  + The scope is made of the variables that participate in the constraint(s)
  + The relation defines the values that those variables can take on, that satisfy the constraint(s)

CSPs admit the usage of backtracking during the search phase (evolving from informed and uninformed search problems)

//todo

More on world state representation

Factored vs Atomic

Consistent assignment

Ternary constraints

Constraint graph vs constraint hypergraph (latter takes more than 2 variables)

Graphs with different nodes : bipartite graphs

***Between declarative and procedural paradigms***

Declarative programming is a paradigm describing WHAT the program does, without explicitly specifying its control flow

Imperative programming is a paradigm describing HOW the program should do something by explicitly specifying each instruction (or statement) step by step, which mutate the program's state

***Constraint graphs***

Interpretation function (see later in course)