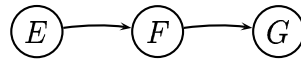


Exercises 3 (due Sep 30–Oct 4)

- List all subepisodes (with arbitrary partial order, i.e., not only serial subepisodes) of $E \rightarrow F \rightarrow G$, i.e., of episode



- Use Algorithm 4.13 to find all parallel episodes in the event sequence of Figure 3.1. Set window width and frequency threshold so that you get useful results.
- What are the intuitive interpretations of the episode rules
 - if $A \rightarrow B$ then $A \rightarrow B \rightarrow C$
 - if B then $A \rightarrow B$
 - if $A \rightarrow B$ then $A \rightarrow C \rightarrow B$
 - if A then B
- What are the minimal occurrences of the episode $A \rightarrow B$ in the following sequence of events? (Time runs on the top, event types are below.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	A	B	A	D	E	B	A	B	B	E	E	A	B	D	A	B	A

What is the confidence of the rule
 if $A \rightarrow B[1.5]$ then $A \rightarrow B \rightarrow A[3.5]$?

- Describe informally how the minimal occurrences of $A \rightarrow B$ would be found in the above sequence.
- What kind of minimal episode occurrences can be found in the following sequence fragments
 - ... A ... A ... vs. ... AA ...
 - ... $AAABBB$... vs. ... AB ...
 - ... AB ... AB ... vs. ... A ... B A ... B ...

where each position (a letter or a dot) denotes a time point. How well does this solve the problems with windowing (cf. task 6 in exercises 2)?

Construct examples where the minimal occurrence framework doesn't behave in an intuitive way.