Sorteernetwerken van Optimale Grootte

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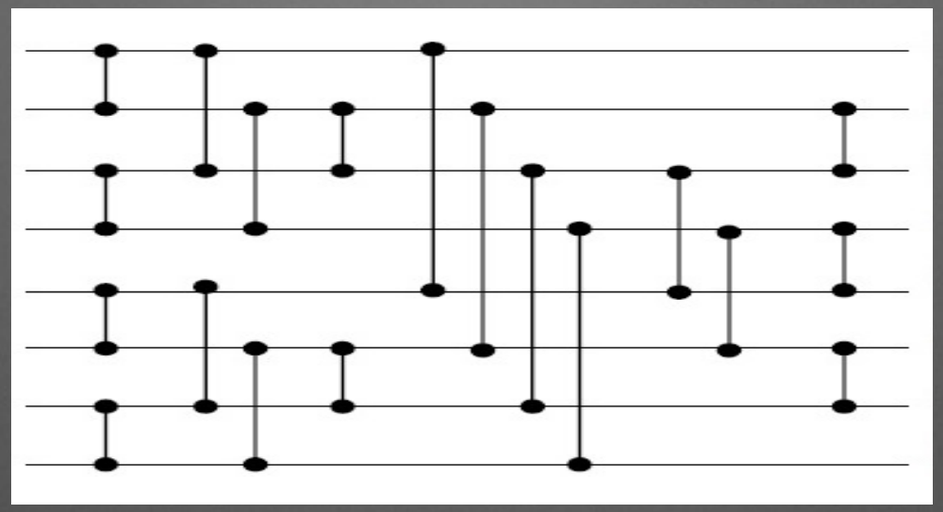
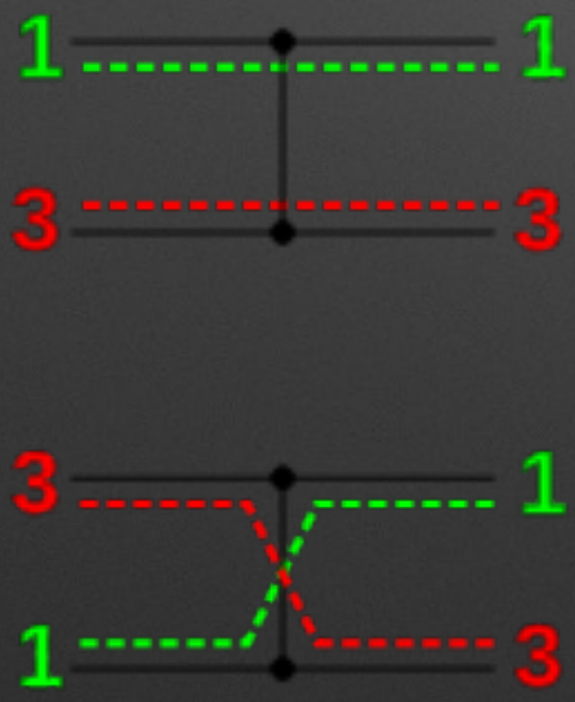
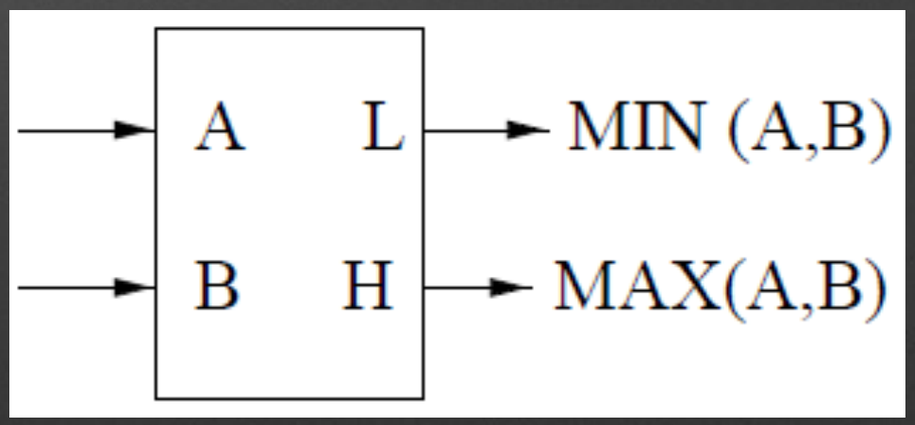
Vincent Derkinderen

Begeleider: Tom Schrijvers

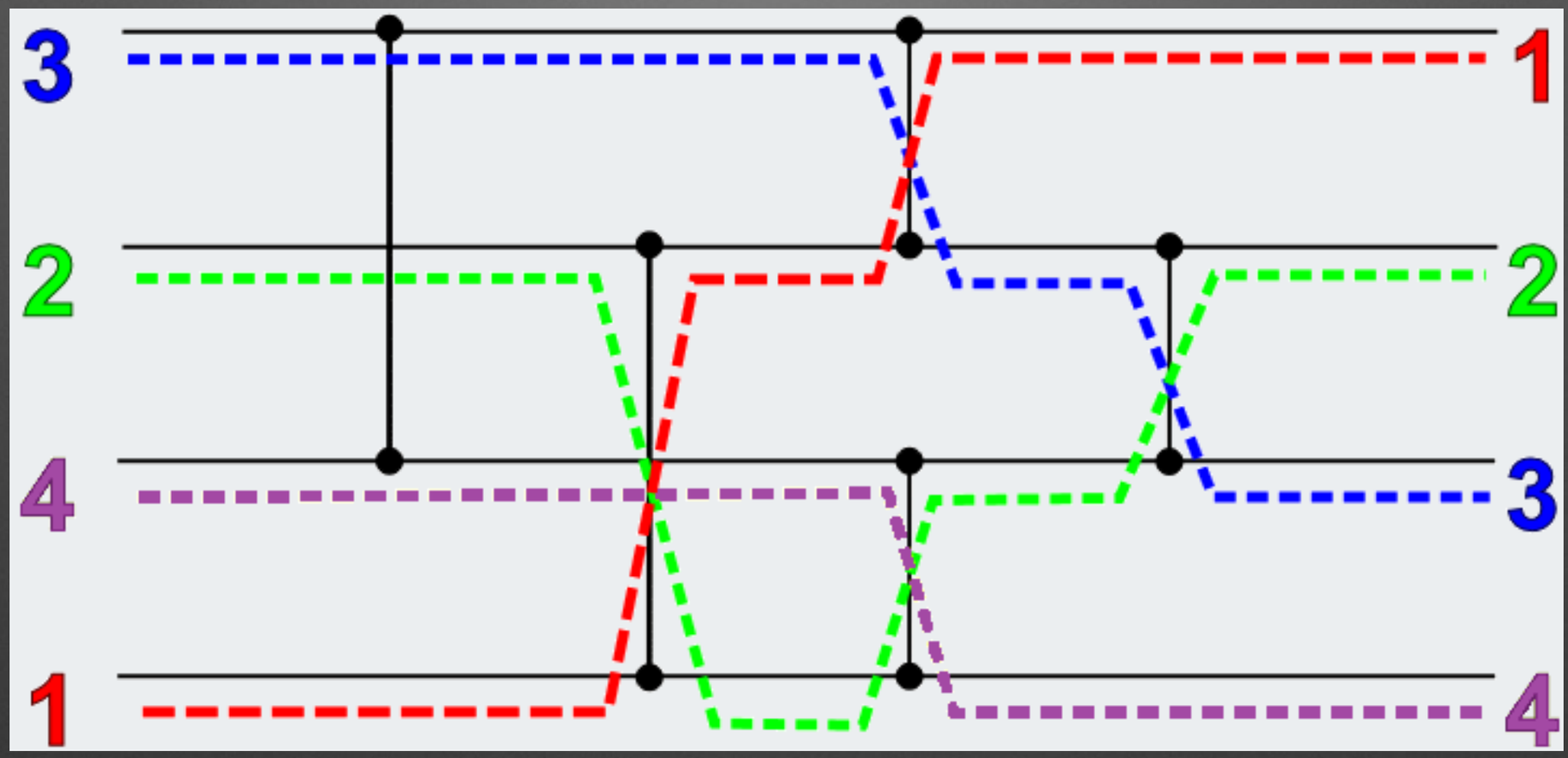
Comparator Netwerk







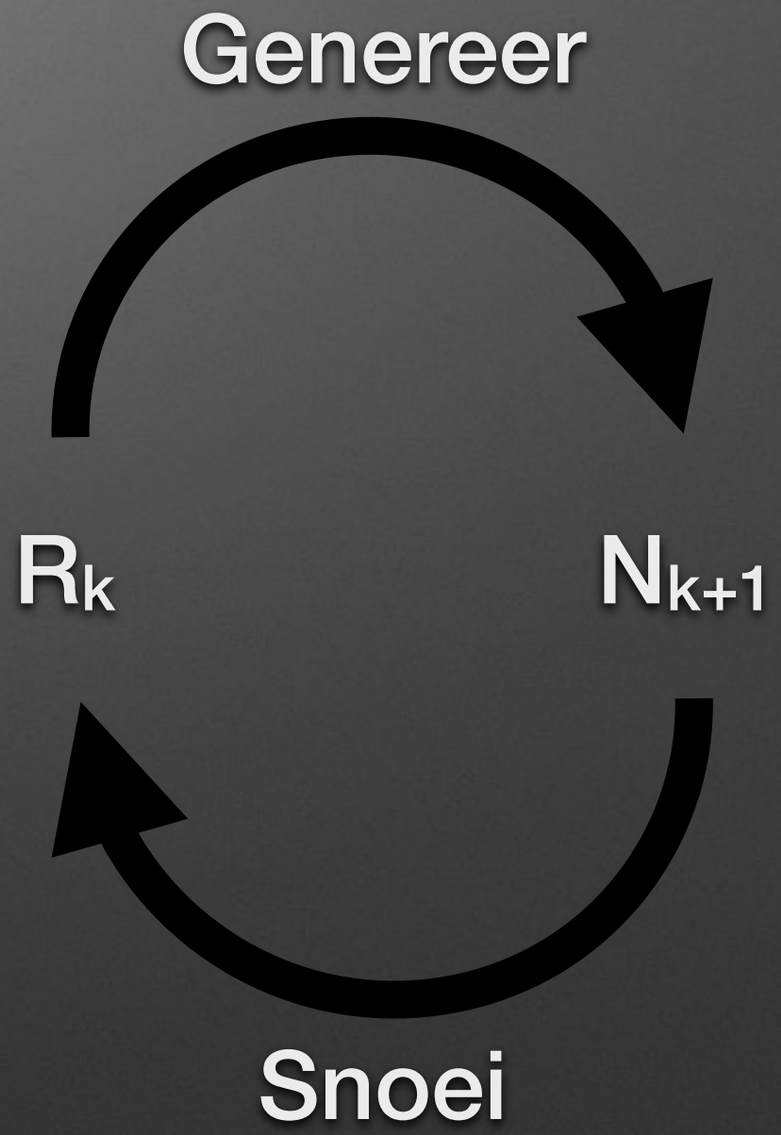
Sorteernetwerk



TODO Vincent: Paint skills

Genereer & Snoei

- Genereer:
  toevoegen alle mogelijke comparatoren
- Snoei:
  subsumes principe



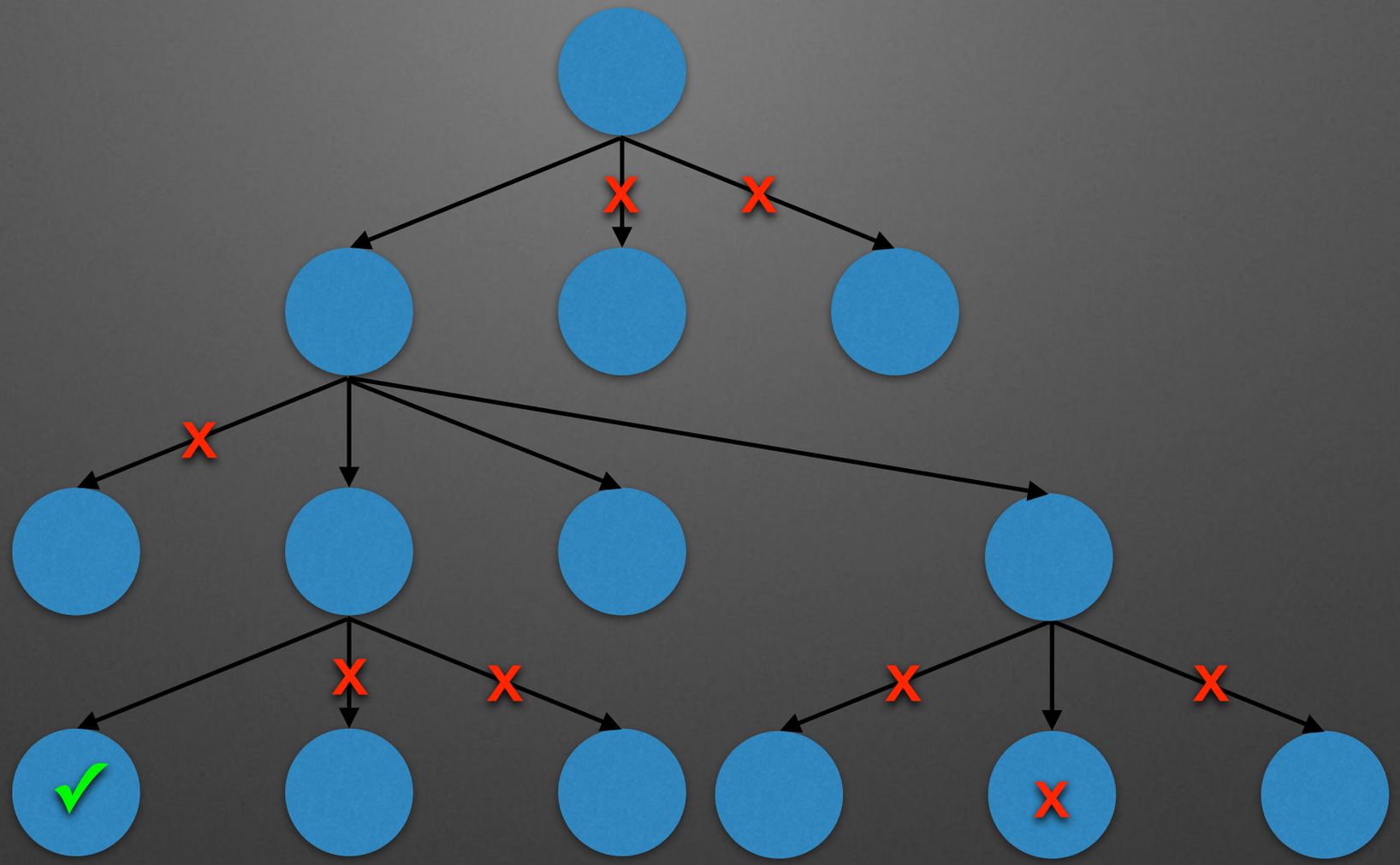
Genereer & Snoei

R_0

$N_1 - R_1$

$N_2 - R_2$

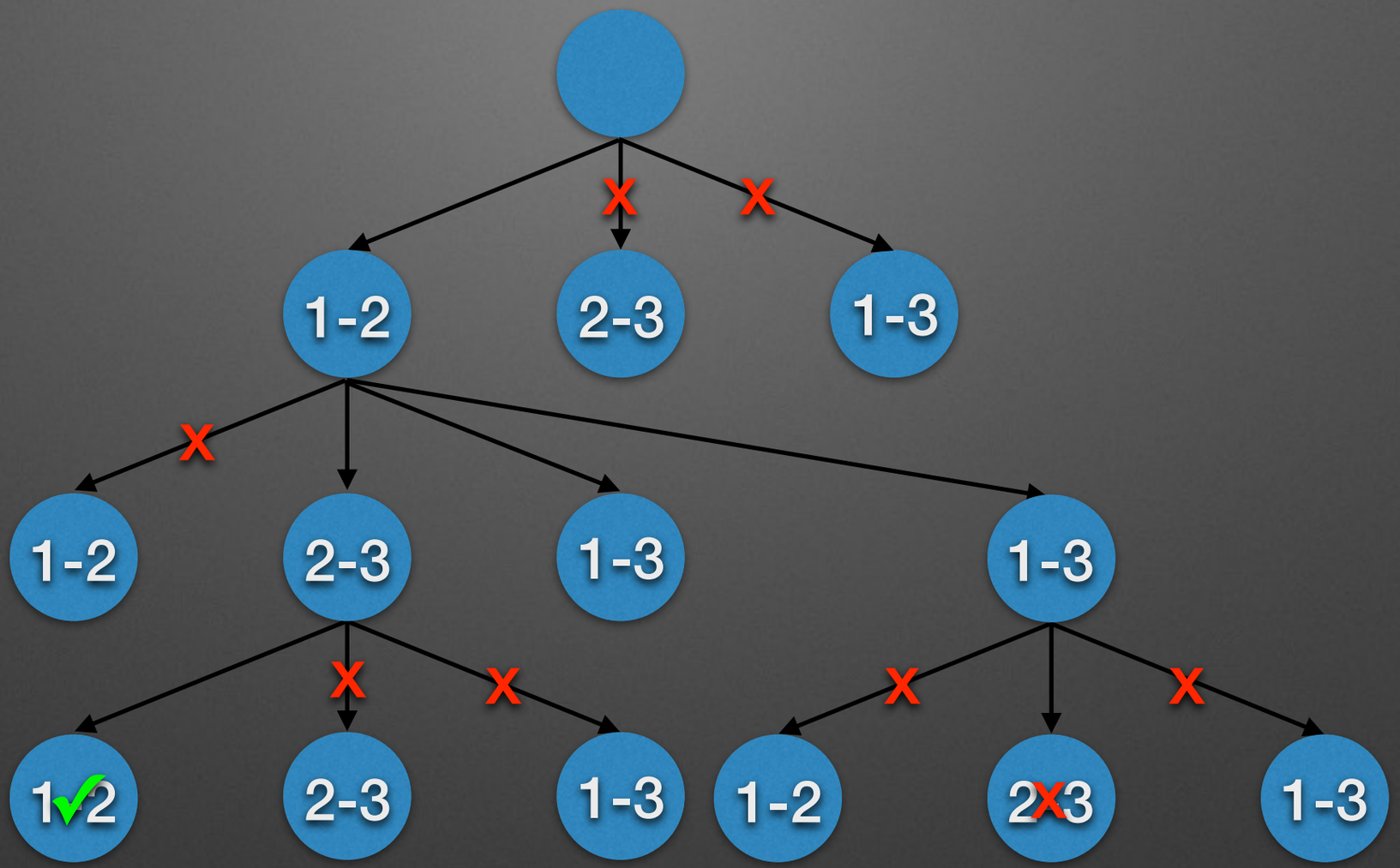
N_3



Subsumes

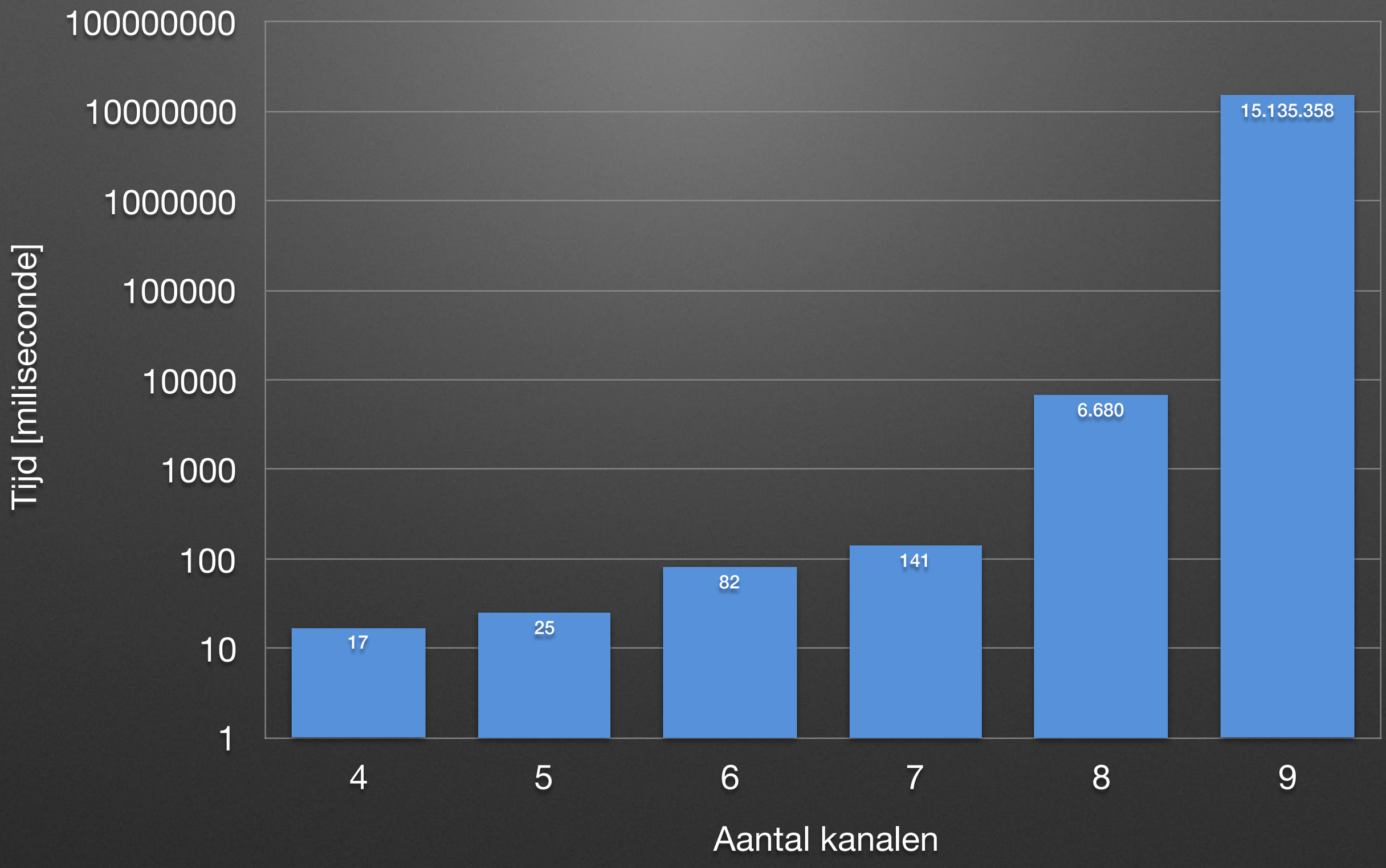
- Beschreven in “Twenty-Five Comparators is Optimal when Sorting Nine Inputs (and Twenty-Nine for Ten)” *(Codish et al.)*
- C_a subsumes $C_b \Leftrightarrow C_a$ wordt gedekt door C_b
- Verwijder de netwerken die anderen dekken

Genereer & Snoei

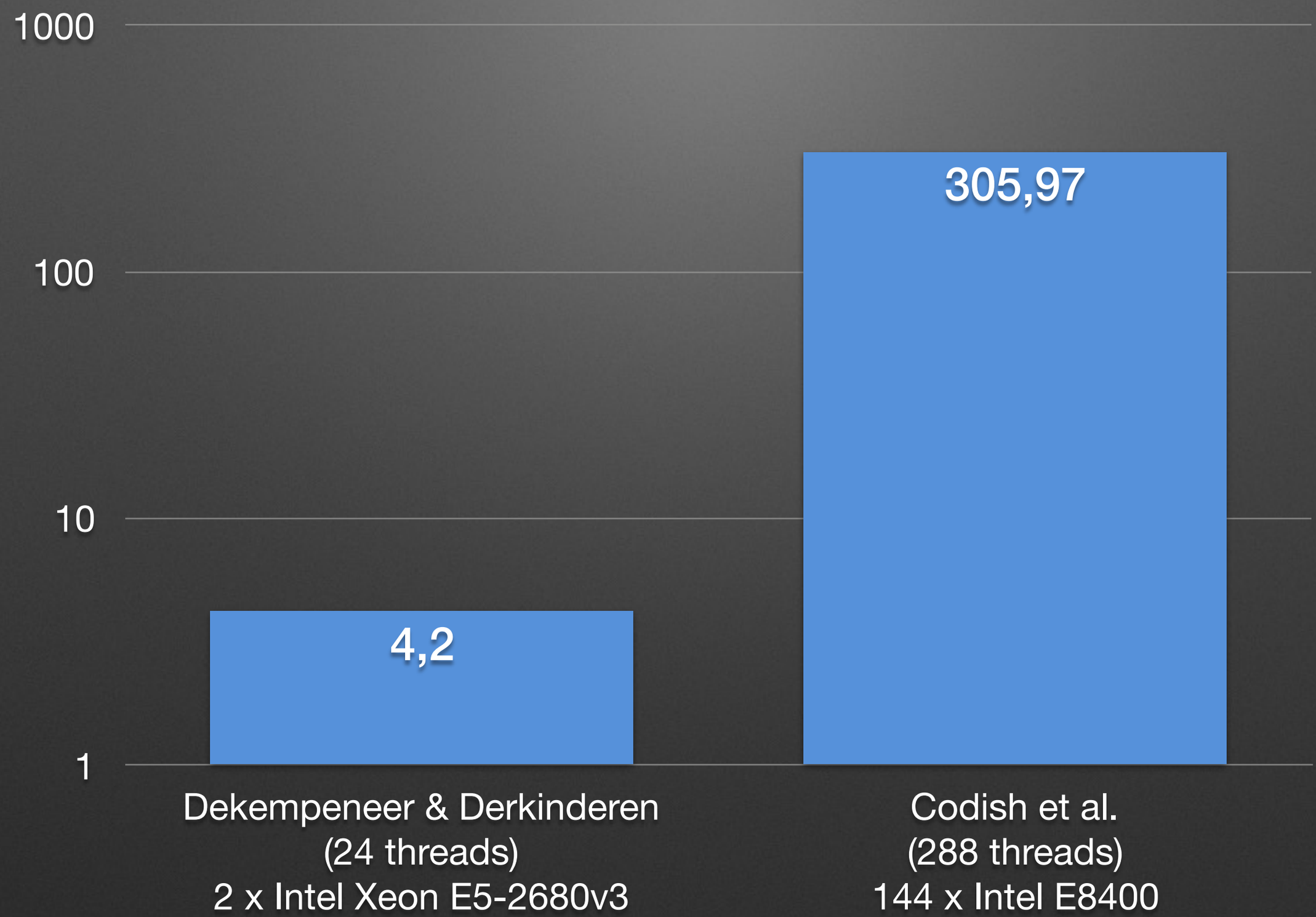


Gevonden sorteernetwerk: (1-2) (2-3) (1-2)

Resultaten


100000000
10000000
1000000
100000
10000
1000
100
10
1
Tijd [miliseconde]
17
25
82
141
6.680
15.135.358
4
5
6
7
8
9
Aantal kanalen

Resultaten


1000
100
10
1
Tijd [uur]
305,97
4,2
Dekempeneer & Derkinderen
(24 threads)
2 x Intel Xeon E5-2680v3
Codish et al.
(288 threads)
144 x Intel E8400

Conclusie

WAT?
Resultaten van de paper gereproduceerd

WAT VOLGT?
Bekijken reden van verbetering
Implementatie voor meerdere nodes
Verbeteringen voor het algoritme zoeken