

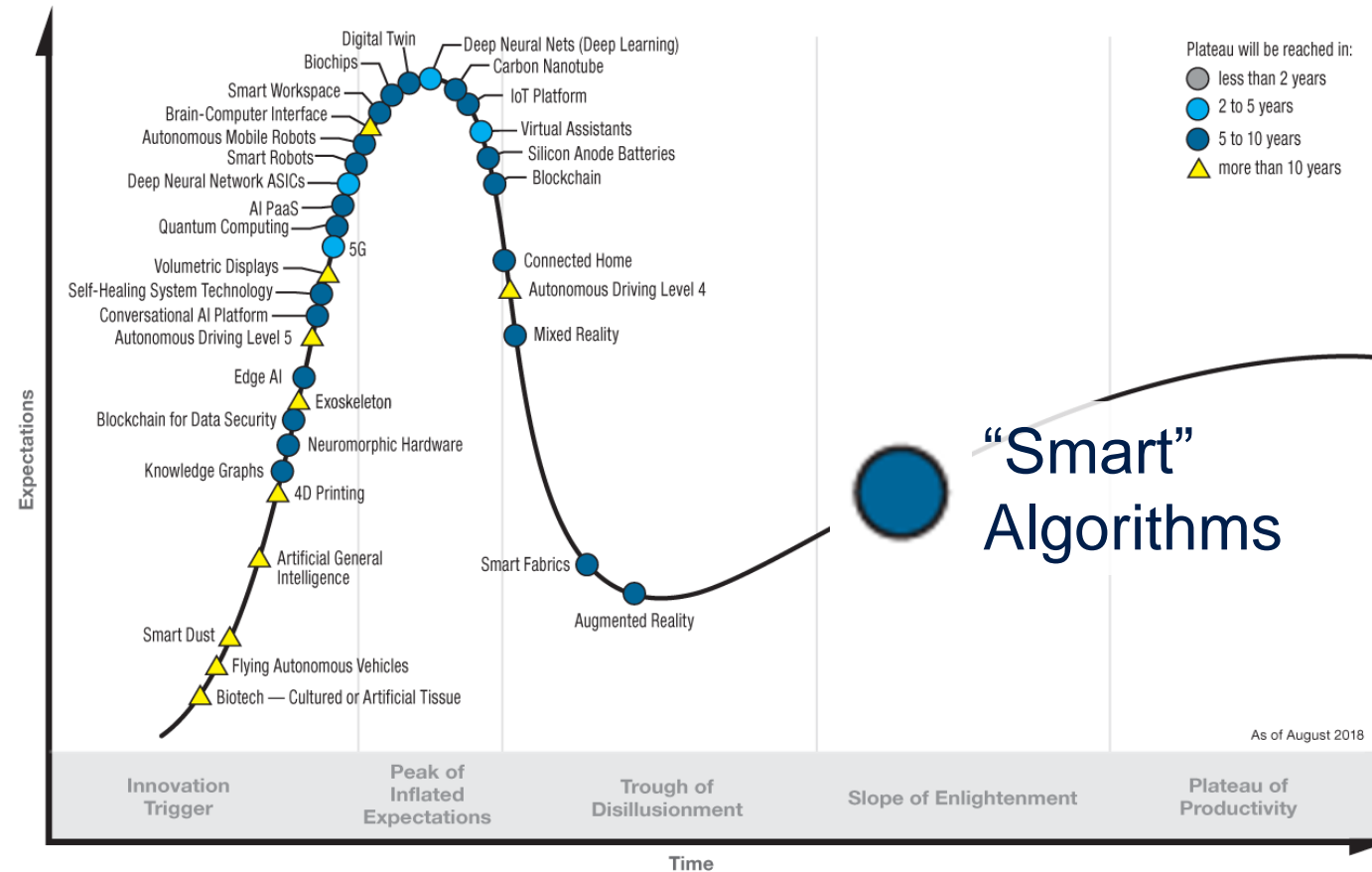
SEXY STANDARDS?

IPIC 2019, JULY 9TH



Hypes

Hype Cycle for Emerging Technologies, 2018



gartner.com/SmarterWithGartner

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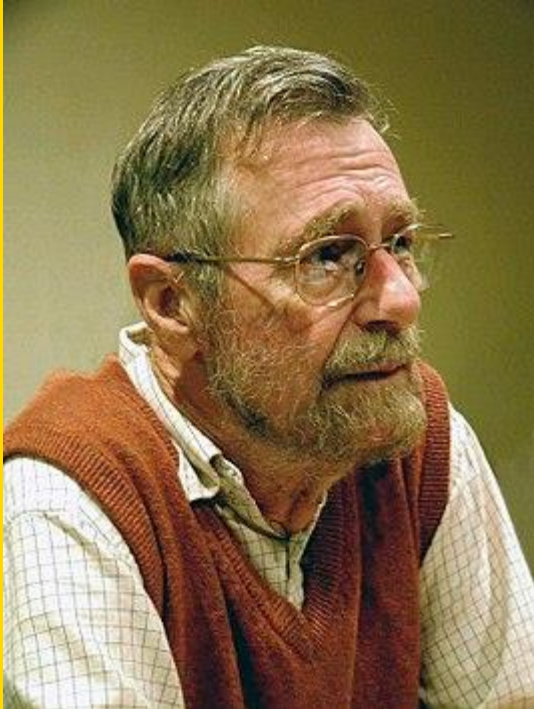
Gartner®

“ Smart Algorithms ?”

“An **algorithm** (from the Persian word Gaarazmi : خوارزمي named after the Persian mathematician Al-Chwarizmi (محمد بن موسى الخوارزمي) is a finite set of instructions, typically to solve a class of problems or perform a computation”

Wikipedia 2019

Dijkstra's Algorithm



- Edsger Wybe Dijkstra
- From Rotterdam
- Dijkstra Algorithm / Shortest Path Algorithm
- "Invented" in 1956 and published in 1959
- 20 Minutes

"The question of whether Machines Can Think... is about as relevant as the question of whether Submarines Can Swim"

"Computer Science is no more about computers than astronomy is about telescopes."

Dijkstra's Algorithm

Google Maps (initially)

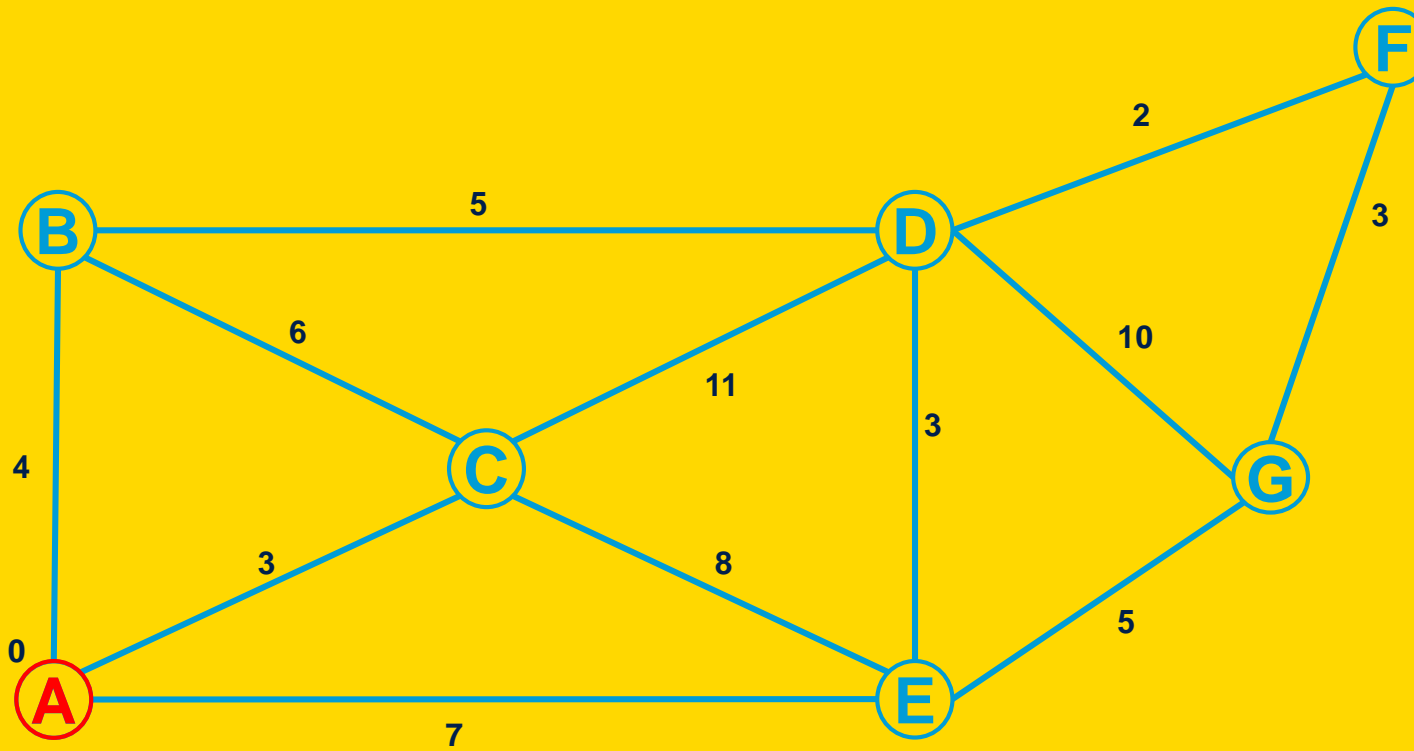
TomTom (initially)

Booking Tickets (lowest costs)

Optimization Problems (Mostly minimization)

Dijkstra's Algorithm

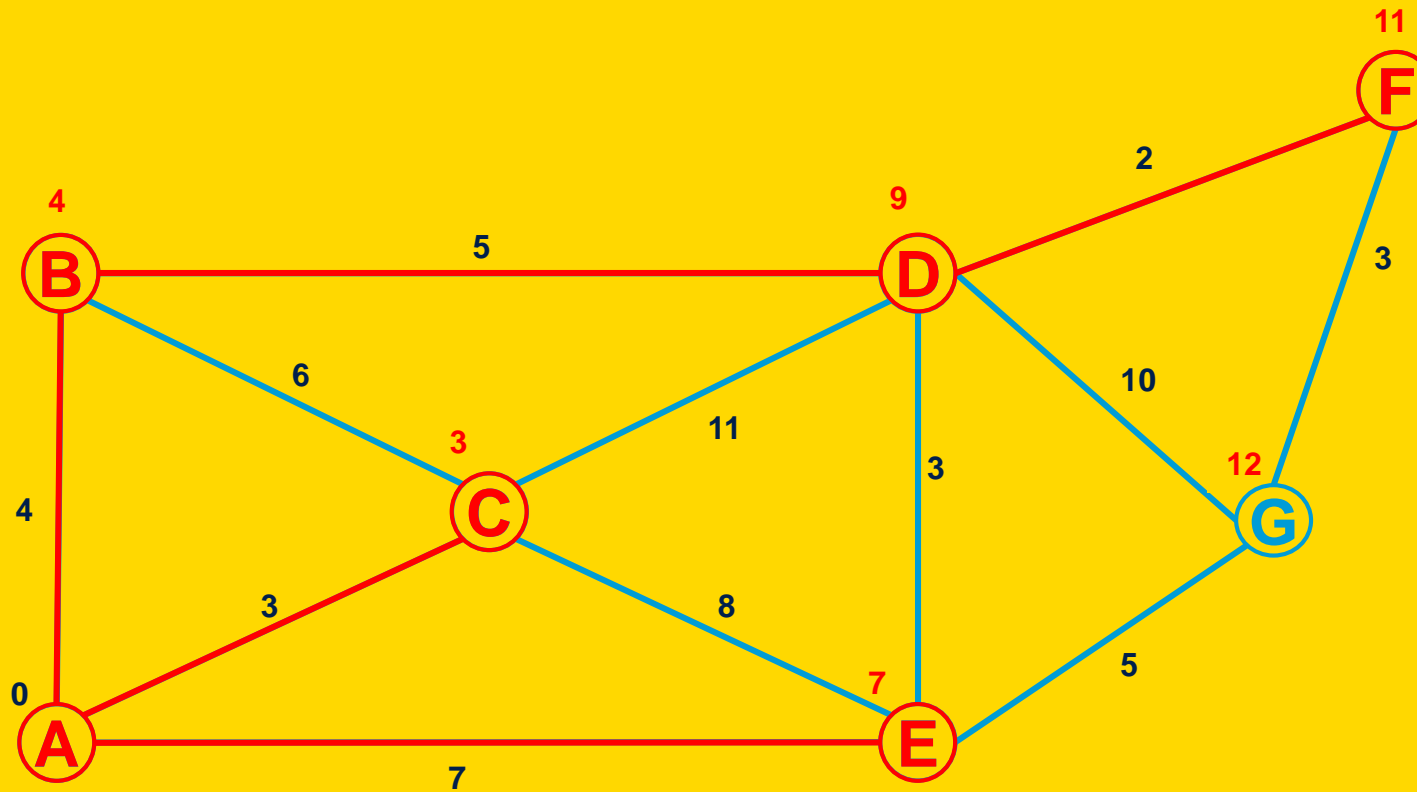
visited nodes: (A)



1. Start Node Goal Node
- 2.
- 3.
- 4.
5. Infinity on nodes, except for the starting node.
6. Visited nodes list

Dijkstra's Algorithm

visited nodes: (A, B, C, D, E, F)



1. Start Node Goal Node
- 2.
- 3.
- 4.
5. Infinity on nodes, except for the starting node.
6. Visited nodes list

Dijkstra's Algorithm



Potential Problems

“Broken” Network

No Data

Incomplete Data

Unclear Definitions

F or f

2x f

Real World

Container Routed via Rotterdam

Data & Standards (on edges & vertices)

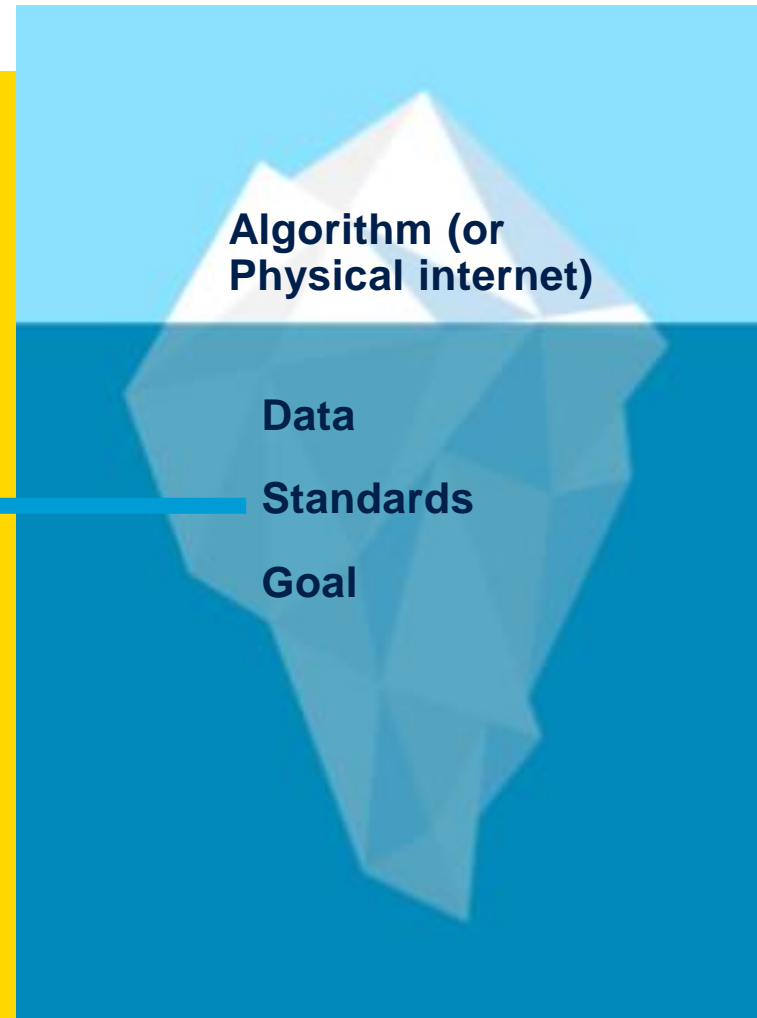
- Where do I sail to? (Which terminal, which berth, which berth position)
- What are the possible paths (routes) in the port? (which routing measures are in place; cargo type, weather type, draught?)
- Which Rotterdam??

If not clearly defined, there is no single algorithm solving any routing optimization problem!

Smart Algorithms



<https://portcalloptimization.org/>



Smart Algorithms

“Aim for brevity while avoiding jargon”

September 5, 1996



Ben van Scherpenzeel

Taskforce Port Call Optimization

scherpenzeel@.ehmc@harbourmaster.org

Pieter de Waard

Port of Rotterdam

Corporate Strategy

pieter.dewaard@portofrotterdam.com