- My name is Robert R. Tucci

  My little company `www.ar-tiste.xyz`

  My app for doing personalized medicine `https://github.com/rrtucci/JudeasRx`

- `https://qbnets.wordpress.com/2021/06/28/dags-versus-bayesian-networks-you-say-tomato-i-say-tomato/`

  Bayesian Network = bnet

  Directed Acyclic Graph = DAG

$$\begin{aligned} \text{bnet} &= \text{causal DAG + probability table for each node} \quad (1) \\ &= \text{causal DAG + dataset} \quad (2) \end{aligned}$$

- JudeasRx draws DAGs from a dot file using Graphviz engine. dot files stored in a folder called the `dot_atlas`

  `https://github.com/rrtucci/JudeasRx/tree/master/dot_atlas`

- Graphviz can be used in a python application.

  `https://nbviewer.org/github/rrtucci/JudeasRx/blob/master/jupyter_notebooks/plotting_dot_files.ipynb`

- Graphviz also implemented online here

  `https://dreampuf.github.io/GraphvizOnline/`

- Boris mentioned on Twitter that he plans to use BayesiaLab. I told him that BayesiaLab is proprietary software and the license is pretty expensive. I told him that my software Quantum Fog (QFog)

  `https://github.com/artiste-qb-net/quantum-fog`
  is free open source and does Inference using the same algorithm (i.e., the Junction Tree (JT) algorithm) as BayesiaLab. BayesiaLab does many things besides Inference, but Inference is the main thing it does.

- Another selling feature of QFog is that it is written in Python. Python has an incredibly rich ecosystem (JudeasRx, numpy, Pandas, Matplotlib, graphviz, PyMC3, jupyter notebooks, ...) that will cut your development time by a factor of 10 at least. (BayesiaLab is written in JAVA)

- The JT algorithm was first proposed by Lauritzen, and Spiegelhalter in 1988 and caused a mini revolution in the bnet community. Many small startups arose that wrote their own app that implemented the JT algorithm. 20-30 years later, the following companies from that era are still alive.

    1. `http://www.bayesia.com`
    2. `http://www.bayesfusion.com`
    3. `http://www.bayesserver.com`
    4. `http://www.hugin.com`
    5. `http://www.agenarisk.com`
    6. `http://www.norsys.com`

- See the Wikipedia article

  `https://en.wikipedia.org/wiki/Junction_tree_algorithm`
  for more info and references on the JT algorithm.

- QFog implements the JT algorithm in the way described in the following excellent "cookbook" paper

  `http://www.ar-tiste.com/Huang-Darwiche1996.pdf`

- Actually, QFog implements the JT algorithm for both classical and quantum bnets, hence its name. But don't let that scare you. Most Qfog functions have a parameter called `is_quantum`. If you set that parameter to `False`, the function applies only to the classical bnets case.