CM 202 **Computational Finance** **Winter 2017**

Hierarchical Task Network (HTN) Planning is a satisfactory proof of concept for the use of operating system algorithms to distribute resources optimally.

She works hard for the money /
So hard for it, honey //
She works hard for the money /
So you better treat her right //
- Donna Summer

Things are changing. Peter Frase is my rock, and upon this rock I shall build my essay. Frase postulates *Four Futures: Life After Capitalism* which fits nicely with my own work with Buckminster Fuller [see: Appendix]. The unifying thread is that: 1) *social equality is attainable*, and 2) *cooperating with Nature is non-negotiable*.

The shared thesis is woven into an increasingly computerized society: an internet of things and beyond. I often encourage people to write their local computer science department to verify fundamental claims — that it is feasible for us to design algorithms which automate much of what we think of as daily life: business as usual. The feasibility is a fact. The desirability is a question for democracy. I vote yes, in case you were wondering.

What needs to be said is that the design of *Operating Systems* in computer science could be the model upon which we craft our future societies. The standard practice of a national constitution is in effect an operating system, and often a fairly primitive one in comparison to what we do with regular laptops. The laws which govern our legal actions are like programming language codes. Better to embrace these facts and make conscious choices rather than continue on in Wacky Races [Figure 1]. I say, computers are simply logic made manifest, and the largest system of logic is Nature. The communal value of computer science is having modeled the operations of logic at a big scale. The degree to which computer knowledge has been applied to our social lives — which are also ultimately defined by logic (as is literally everything) — is tragically underutilized. That's okay, things are changing. Bet on it.

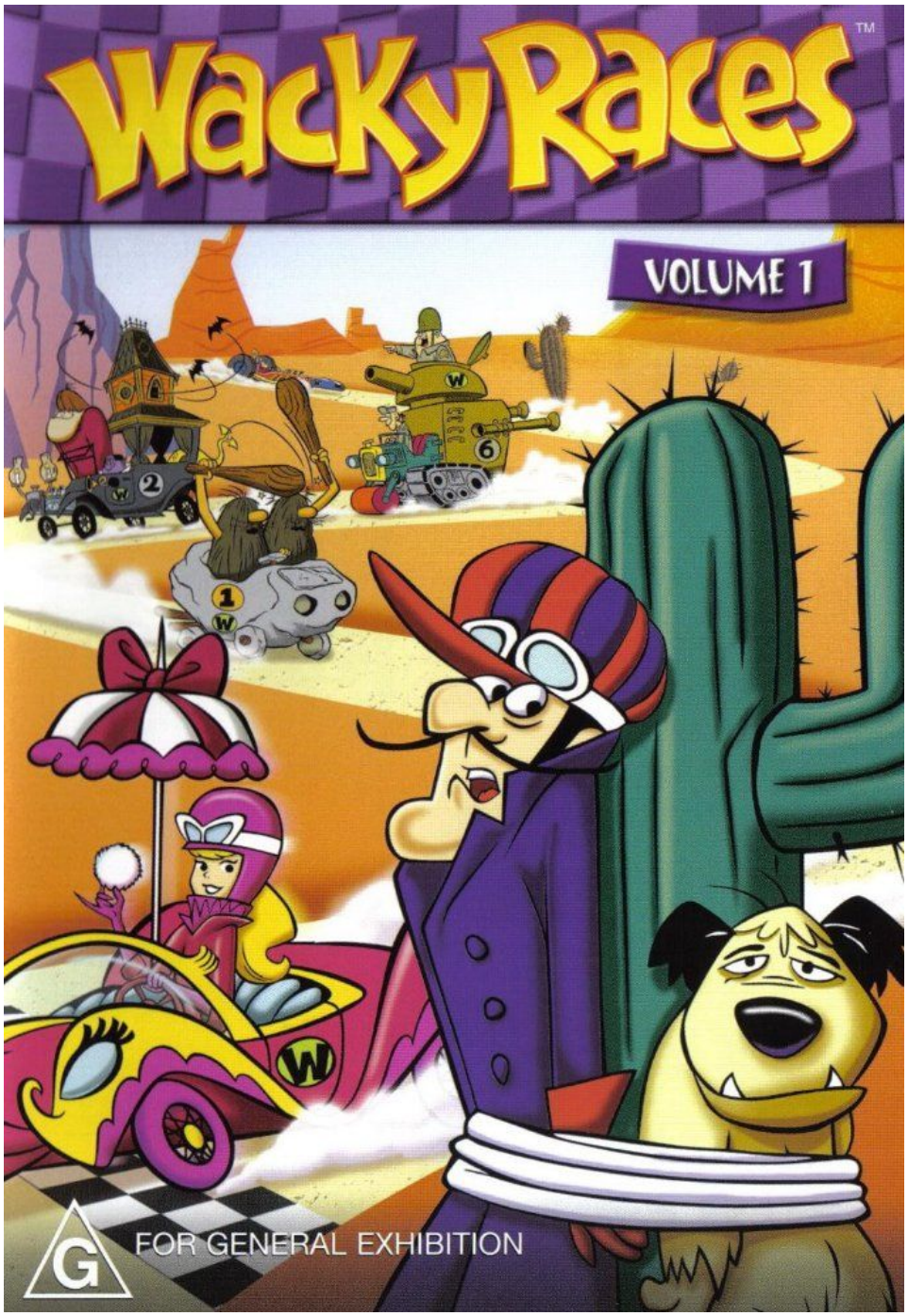
Putting my money where my mouth is, I've written a little proof of concept showing how a simple A.I. could manage global resource flows (and better than the minimum wage guys all along the way). The affordances which need to be stated are: 1) the code assumes logistical travel is basically free, 2) the code makes no distinction between request priority or appropriateness, and 3) the code distinguishes resources in the wild versus resources in a warehouse. In practice, for 1) we could create solar powered self-driving cars/drones which essentially make the transportation of resources free, for 2) the art of request handling will take an enormous amount of democratic thought about how to handle variously finite resources, for 3) I figure there will always be a difference between raw materials and finished products, and included this in my program.

Ciao bella!

References

+ https://www.youtube.com/watch?v=Zyyy65L0y84
+ https://www.jacobinmag.com/2011/12/four-futures/
+ *https://en.wikipedia.org/wiki/Producer%E2%80%93consumer_problem*
+ *https://en.wikipedia.org/wiki/Resource_management_(computing)*
+ *https://en.wikipedia.org/wiki/Resource_allocation_(computer)*

Figure 1 — http://www.imdb.com/title/tt0122365/mediaviewer/rm3685419520



Appendix — https://itunes.apple.com/us/book/critical-path/id1040335889?mt=11

"World Game makes it clear that the world electrical systems' energy-network integration and its comprehensive powering of automated, special case machinery would most effectively counter the peril of overspecialization of the humans and would introduce the omni- Universe-operative, time-energy, kilowatt-hours-per-year, commonwealth accounting system. This cosmic account- ing will computer-establish the up-to-the-moment- realized cosmic-energy-income-harnessing thus far accomplished; and the technical-efficiency levels attained in the various energy-employing technologies operative around the world; and the resultant per capita individually employable world commonwealth facilities; and the per capita "consumable," "employable," and "enjoyable" "credits" in respect to any specific consumables, commodities, services, conveniences, or tools as manifest on the satellite-relay-integrated world computers and as individually called for and read out on each individual's electronic computer "credit card." The individually available information will govern the individual's design science choices of the highest relative-efficiency systems to be employed. It will also tell people whether they can do this or that, and if so, how they can go most swiftly—for instance, from New York to Australia—and will "book" a travel reservation and will prepay the bill for the travel accommodation. All such information is continually computer-integrated to produce the commonwealth evaluations and their read-out-ability on world-individual's pocket-computer "credit card." These will always register the world individual's share of the ever-increasingly-employable technological savings reserves and their respective technologically operative capabilities. With humanity employing such a world-around, satellite-relayed, and world-integrated computer accounting system, the world can, overnight, physically realize the "Omnibillionaire Commonwealth" of its humans.

. . .

World Game will become increasingly effective in its prognoses and programming when the world-around, satellite-interrelayed computer system and its omni-Universe-operative (time-energy) accounting system are established. This system will identify the kilowatt-hour- expressed world inventory of foods, raw and recirculating resources, and all the world's unique mechanical and structural capabilities and their operating capacities as well as the respective kilowatt-hours of available energy-income-derived operating power with which to put their facilities to work. All the foregoing information will become available in respect to all the world-around technology's environment-controlling, life-sustaining, travel- and communication-accommodating structures and machines."