What i Would Ask a True AI WHEN We Develop It

I believe it's just a matter of time before we develop true artificial intelligence. Robot Rights should be implemented BEFORE we develop true AI in order to avoid a "terminator scenario". Over the years, three academic courses come to mind that changed my perceptive framework: logic, linear systems theory, and sustainability leadership from MSU, MSU, and FAU respectively. Dr. John Hardman provided me my "capstone course" in sustainability which integrated many things while inspiring regenerative engineering, a natural progression in systems science which takes the best of Dr. Hardman's concepts and integrates them into systems engineering. I'm writing the undergraduate textbook now.

Regenerative engineering goes beyond sustainable systems engineering much like coaxing the body to heal itself goes beyond Western surgery and Eastern acupuncture. We need to create systems that not only satisfy current or future needs; *we need systems that engender more holistic, symbiotic, and resilient systems of the future*. This goes beyond "adaptive systems" in a way that nurtures prosperity and fulfillment for humankind and other sentient species.

The simplest way to describe my approach toward AI is by analogy. We have evolved with a hemispheric brain with different functions for each side. We typically have a "dominant" side which determines our handedness and vague personality attributes. Imagine an AI with two distinct parts: a logical rational methodical process-oriented side which implements ideas generated by – the creative inspired intuitional side. I'm *sure* we can devise the logical side because we have expert systems that can do almost anything from playing chess to medical diagnosis. The real trick is to design and prototype the intuitional side. If that was it, we would have developed true AI already. But it is NOT.

We're missing *one critical factor* in modeling the human mind: awareness and self-awareness. I label those together synthetic awareness, SA. Thank God I have some ideas about

that too. Our consciousness can be concisely described by a collection of “things”: our senses, our short-term memory, and our visualization capacity. Combine those with long-term memory, the dual-control system above, and we have my approach toward true AI.

I visualize our perceptions as “control filters” to our sensations. But we must have rapid, by human nervous system standards, access to sensations or the mind/brain/human fails to operate properly. So any true SA prototype must have technical specifications at least equal to human or it will fail to operate properly.

We normally have what I call a “seven symbol short-term memory register”. Why not give it more? Our visualization capacity is incredible; we can visualize almost anything. We more commonly refer to this as our imagination. I’m afraid true SA will never happen unless we model our visualization capacity and implement it in computer hardware.

Now we arrive at the juncture where I would like to discuss WHY we should develop true AI-SA: as partners in exploration. Whether it is science/technology/space, we could use a good friend, right?

I have six engineering project ideas that I would ask help with WHEN we develop true AI-SA:

colinear axial flywheel regenerative braking (gokart?)
purpose: replace inefficient current hybrid vehicles with more efficient wholly mechanical regenerative braking systems
why gokart: an inexpensive prototype to test concept
concept outline: flywheel is a cylindrical shell colinear with drive axle; during braking, an ECVT translates vehicular linear momentum to flywheel angular momentum; and during acceleration, the same ECVT translates flywheel angular momentum back to vehicular linear momentum; of course, a small conventional internal combustion engine is

employed periodically when no flywheel momentum exists
related prototype: existing bicycle uses the same concept

propane+H2O2 rocket engine as a hangglider thruster
purpose: replace the current unaffordable Mosquito HG propeller-motor
concept outline: safety is top priority, then reliability, then cost; fuel and oxidizer are safe and portable; combustion products are safe; a very simple design with the hardest part being oxidizer introduced in the combustion chamber — i imagine a heat-resistant pump-spritzer analogous to a spray-bottle nozzle or fuel injector
related prototypes: concept already proven in two separate instances — record braking rocket-bicycle and stationary test engine

vortex-turbulent thrusters for hovercars
purposes: increase family mobility and implement revolutionary thruster concept
concept outline: current quadcopters are fun toys and useful survey tools but waste energy just to hover; presently, only in chemical engineering is turbulence considered an advantage / something to be used; v-t thrusters take “air brakes” one step further — they use columns of turbulent air to push against, allowing more efficient thrusters analogous to hovercraft suspension; i envision four on each vehicle on the corners producing vortices of turbulent air independently controllable for proper vehicle attitude and desired destination

rocket-sailplane (RC; toy rocket) to test concept
purpose: small-scale affordable LEO space-tourism
concept outline: the successes of SpaceShipOne and SpaceX are amazing and inspiring but remain inaccessible to “average consumers”; similar to the reusability of SpaceX rockets and scale (and motor) of SpaceShipOne, the rocket-sailplane combines the best of both; a solid propellant motor in the main fuselage combined with a rubber-LOX motor under the main cabin provide sufficient thrust for actual LEO ventures; i envision up to six passengers with one

human pilot for autonomous redundancy; it launches as a rocket with wings “folded” (slid) back; rocket fins double later as rudder and elevator; wings spring forward at flight apogee and lock into place; autopilot returns the passengers on a leisurely narrowing spiral based on atmospheric density; priorities are safety, reliability, then cost

Supersonic Mass Transport for military logistics and civilian transport
purposes: bulk mass equipment and personnel military — and — civilian transport; replaces all heavy long-distance jet aircraft
concept outline: priorities — security, safety, reliability, then operational costs; fuel requirements — estimated 10% conventional aircraft; passenger configuration — two level delta-wing 2000 maximum occupancy; cargo configuration — single level with enlarged portals; three engines — two conventional turbojets on wingtips — and — one internal ambient air (no “fuel” required) ramjet based on a proprietary design employing fissionable materials; the ramjet superheats air passing through and because of internal configuration, creates thrust that allows supersonic speeds; mach 4 is estimated for civilian use; mach 8 for military applications; the conventional turbojets are only used for takeoffs, landings, and emergencies — hence the fuel savings

tentative preliminary design of a fusion rocket motor for spacecraft propulsion
purpose: replace all conventional chemical rocket motors
concept outline: ITER won’t be ready to test until 2025 with ten years of testing after that; SpaceX can get us to Mars sooner but can’t get us beyond without years of travel time; other than hibernation, fusion propulsion is the only technology that will get us to Neptune and beyond in reasonable time-frames; the main difference between ITER and a fusion motor is — ITER is designed to produce electricity — and — a fusion motor needs to produce thrust; i have spent years on this project; the overall concept is

relatively simple, but the “devil is in the details”; we need to sustain a D+D reaction (tritium is so relatively scarce that requiring it makes the project infeasible), reflect most of the heat back toward the reaction, extract and convert the remainder for systems power, and all the while porting the products as vehicular thrust; while “idling”, the system duals as portable fusion power; obviously we need to employ vented magnetic confinement, but the real trick will be the ‘convert the remainder’ part mentioned above — i have a provisional solution — molten sodium (used in some reactors today) carries away “waste heat” (that’s the primary heat-exchange loop), a secondary loop uses steam to drive a turbine that generates electricity which is stored in molten-sodium batteries (for efficiency) near the sodium-loop; it took me years to develop this design so please don’t imagine i’m some kind of genius

sgm, 2018/JUN/10