

Computer Science 1000: Part #12:

Where We're Going: The Wild Blue Yonder

COMPUTING TODAY AND TOMORROW
DEALING WITH THE
COMPUTING WORLD OF TOMORROW

Computing in 2020: The State of the Art

- Cheap personal computing devices
- Cheap easy-to-use software applications
- Cheap(ish) highspeed wireless
- Massive online media (text / audio / video)
- Massive online personal data
- Massive processing power
- ... All widely available 24/7 ...
- ... And there's more of it all every day ...

The Computing World of Today

- Computers are *everywhere*.
- Billions of computer users.
- Tens of millions of computing professionals.
- Many computing-based industries, *e.g.*, computer manufacturing, software development / maintenance, computer games.
- Innovative and varied computing research in academia (computer engineering / computer science) and industry.

Welcome to the World of Tomorrow!



The Computing World of Tomorrow

- Technology:
 - More memory and faster processing in smaller, cheaper packages (spintronic / optical / quantum computing)
 - Faster / higher bandwidth network access in more places
 - Innovative interfaces (better NLP, optical interfaces (Google glass), neural interfaces (BCI))
 - Wearable / implantable computing (cybernetic organism \Rightarrow cyborg)
 - Maybe: Self-aware and (trans-)human-capable AI
- Society:
 - Ubiquitous computing (The Internet of Things)
 - Increasing commercialization of computing
 - Increasing politicization of computing

Surviving and Thriving in the Computing World of Tomorrow

- Be a Digital Citizen (Rheingold):
 1. Know why you're doing what you're doing (mindfulness)
 2. Learn what and who you can trust (Crap Detection 101)
 3. Learn how to participate responsibly and effectively.
 4. Learn how to collaborate responsibly and effectively.
 5. Learn and use relevant technology to aid in (1–4) above.
- Be aware of what's going on technology-wise
- Help make the computing future you want, with your personal, commercial, and political choices

Anyone who fights for the future lives in it today.
– Ayn Rand