Science Fiction and Technology

From HAL to Watson

by Jeff Bass (Jeff.Bass@Marist.edu)
and
Alan Labouseur (Alan.Labouseur@Marist.edu)

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HAL

2001 A Space Odyssey - 1960s

- Powerful but paranoid
- Natural Language Processing
- Speech recognition and synthesis
- Data analysis and reasoning
- Chess playing
Space Travel

Destination Moon - 1950s
2001 A Space Odyssey - 1960s

- g-forces
- Single stage rocket
- The silence of space.

- Artificial gravity through rotation.
SAGE
IBM, MIT, Burroughs - 1960s

Lost in Space - 1960s
Enterprise Computer
Star Trek - 1960s

- Natural Language Processing
- Speech recognition and synthesis
- Data analysis and reasoning
- Three-dimensional Chess playing
  - Should be able to beat Spock.
Matter / Antimatter

- 1960s - Star Trek’s fuel for the warp core.
- 2010s - Anti-hydrogen created and briefly stored at CERN’s Large Hadron Collider.
Genetic Manipulation

- Aldus Huxley’s Brave New World - 1931
  - Breeding selective traits

- Star Trek’s Eugenics Wars (Khan!) - 1969
  - Bio-engineering supermen (and women)

- Today: STEM cells
Early Star Trek

- Communicators and smart phones
- Medical diagnostic displays
- Wireless ear pieces
Early Star Trek

- Solid state data storage
- Tablet computing
- Permanent Space Stations
Colossus
Charles A. Forbin - 1970s

- A computer that ruins the lives of the people around it, violates their privacy, and makes them paranoid.

- That could never happen, right?

- What could possibly go wrong?
Environmentalism
Silent Running, 1972

- Then: Valley Forge carries the last specimens of Earth’s plant life.

- Now: UK’s Eden Project

- Now: Norway’s Global Seed Vault
Identity and Privacy

  - Uncertain Identity
  - What does it mean to be human?

  - Variable Identity
  - Ubiquitous spying
  - Paranoia
WOPR
War Games - 1983

- Coined the term “firewall” in computing
- Illustrated war dialing
- A reflection of SAGE, not a prediction
- Stored in Cheyenne Mountain
  - also home to Earth’s Stargate
- Dialing in from home
- Hacking school computers
Hunter/Killer Drones

Terminator - 1984

- Then: Dystopian future of aerial Hunter-Killer drones controlled by machines and used to kill people.

- Now: Aerial Hunter-Killer type drones controlled by people (for now, see Colossus) used to kill people.
Education
Starfleet Academy and Marist College . . .

. . . both producing leaders of the future.
Recent Science Fiction
Less predictive of today’s technology

- Star Trek: The Next Generation

- Clunky laptops, tablets, and memory. Where was Jobs?
- Terabytes of memory. Really? I have that at home already.
Recent Science Fiction
Less predictive of today’s technology

- Star Wars
  - “Your sad devotion to that ancient religion has not helped you conjure up the stolen data tapes”
- Antigravity vehicles
- Artificial gravity without rotation
Recent Science Fiction
Less predictive of today’s technology

- The Matrix
  - Virtual Reality is nothing like that.
  - Too bad?
  - Maybe not.
How does SF do overall?

- Early: 1960s and 1970s
  - Pretty well

- Later: 1980s and on
  - Not great, though there were some high points.
Why?
We pose one of many possible reasons:

- Earlier Science Fiction creators had less to go on.
  - Fewer assumptions - conscious or unconscious
  - Fewer restrictions on believability

- They benefit from the generational influence on their future (our present) scientists
HAL
2001 A Space Odyssey - 1960s

- Powerful but paranoid
- Natural Language Processing
- Speech recognition and synthesis
- Data analysis and reasoning
- Chess playing
Watson
IBM Research - 2011

- Powerful, but less paranoid (one hopes)
- Natural Language Processing
- Speech recognition and synthesis
- Data analysis and reasoning
- Successor to chess-playing Deep Blue
What’s Next?
for innovation in Enterprise Computing

- “The best way to predict the future is to invent it.”
  - Alan Kay, inventor of OOP

- You are the inventors.
  - Don’t be hindered by today’s assumptions.
  - Don’t be constrained by believability.
  - Do influence the next generation of scientists.
THINK big
about Enterprise Computing

- iCloud? No.

- Think Oort Cloud.
THINK different about Enterprise Computing

- Internet Protocol? No.
- Think Interplanetary Protocol.
Make No Assumptions

- You assume Jeff and Alan are human.

- Let’s look at them in their real form . . .