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UNIVERSITY OF CALIFORNIA, IRVINE

GAME CULTURE & TECHNOLOGY LAB

The Game Grid: Research Vision

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Overview

- Research Problems
- Approach
- Related efforts
- Conclusions

Csports.net - Mozilla
File Edit View Go Bookmarks Tools Window Help
http://www.computerandvideogames.com/r/?domain=csp&feed=index&us
Search
Home Bookmarks RealPlayer
computer and video GAMES .com
Enter a game...
GO
NEWS PREVIEWS REVIEWS FEATURES DATA INTERACT DOWNLOAD TIPS PLAY
USER DETAILS
Guest
LEVEL: 0
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FILTER BY FORMATS
PC PS2 XBX GC GBA MAC MISC OLD APPLY
RELATED ARTICLES
CSPORTS.NET RANKINGS
SERVICES
SPONSORED WEB LINKS
Players In Last 31 Days
RANK GAME PLAYERS
1 Half Life 10,148,497
2 Medal Of Honor 906,161
3 Quake III Arena 886,048
4 Unreal Tournament 643,577
5 Return to Castle Wolfenstein 552,322
6 Unreal Tournament 2003 446,622
7 Soldier Of Fortune II 335,739
8 Jedi Knight II 227,968
9 Quake II 182,335
10 America's Army 134,638
11 Tribes 123,477
12 Tribes 2 114,873
13 Battlefield 1942 98,207
14 Rogue Spear 96,182
15 Soldier Of Fortune 63,822
16 Quake World 36,169
17 Rune 29,195
18 Star Trek Elite Force 28,920
19 Urban Operations 28,857
20 Unreal 22,725
21 Global Operations 19,634
22 Serious Sam II 18,605
23 Legends of Might and Magic 18,160
24 Deus Ex 15,430
25 Kingpin 13,625
26 No One Lives Forever 12,070
SAVE 42%
ebay.co.uk
Click Here
Done
ALL TIME PLAYERS: 149,905,565
ACTIVE PLAYERS: 15,266,008
PLAYERS TODAY: 1,966,600
PLAYING NOW: 110,827
SERVERS KNOWN: 770,032
LIVE GAMES: 13,073
TITLES MONITORED: 58
MODS RECORDED: 1,702
MAPS RECORDED: 213,970
3 TRIAL ISSUES
ebay.co.uk
Click Here
ONLINE TODAY
26k 12k 98k 84k 70k 56k 42k 28k 14k
Max : 148106 players at 08:47 PM
TOP GAMES NOW
(Game) (%)
Half Life 63
Medal Of Honor 8
Battlefield 1942 5
Others 24

The *Game Grid*

- A networked, clustered computing environment for researching, developing, playing and experiencing (beyond) next generation computer games and game worlds.
  - Not just Web services framework and computing grid fabric.
- But a *testbed*, *archive*, *community* and *venue* for new ways of developing, deploying, and performing game-based synthetic or mixed reality environments across a variety of (heterogeneous) platforms.
- See http://www.ucgamelab.net

(One) Game Grid research problem

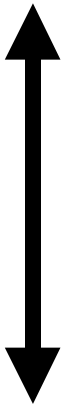
- What is the *best* way to rapidly create networked game worlds and play experience?
  - "best" =>
    - faster, better, cheaper
    - open source (e.g., BSD/MIT style license)
    - (global) community-based development, contribution and support
    - Fun, enjoyable, intrinsically motivating, disruptive, etc.
- Modification, Construction, or Generation?

Proposed solutions

- Modification
  - Hack existing game content, levels, engine
  - Repurpose content/data from other sources
- Construction
  - Scripting (*UnrealScript vs. C-shell/Perl/Python/…*)
  - Custom programming using SDK and other tools
- Generation
  - Parameter value instantiation
  - Macro expansion
  - Language-directed (game) application generation
  - Meta-environments tailored for (game) domain

Proposed solutions: evaluation

- Generation
- Modification
- Construction



Automated support?

Ease of use/development?

Flexibility?

Approach

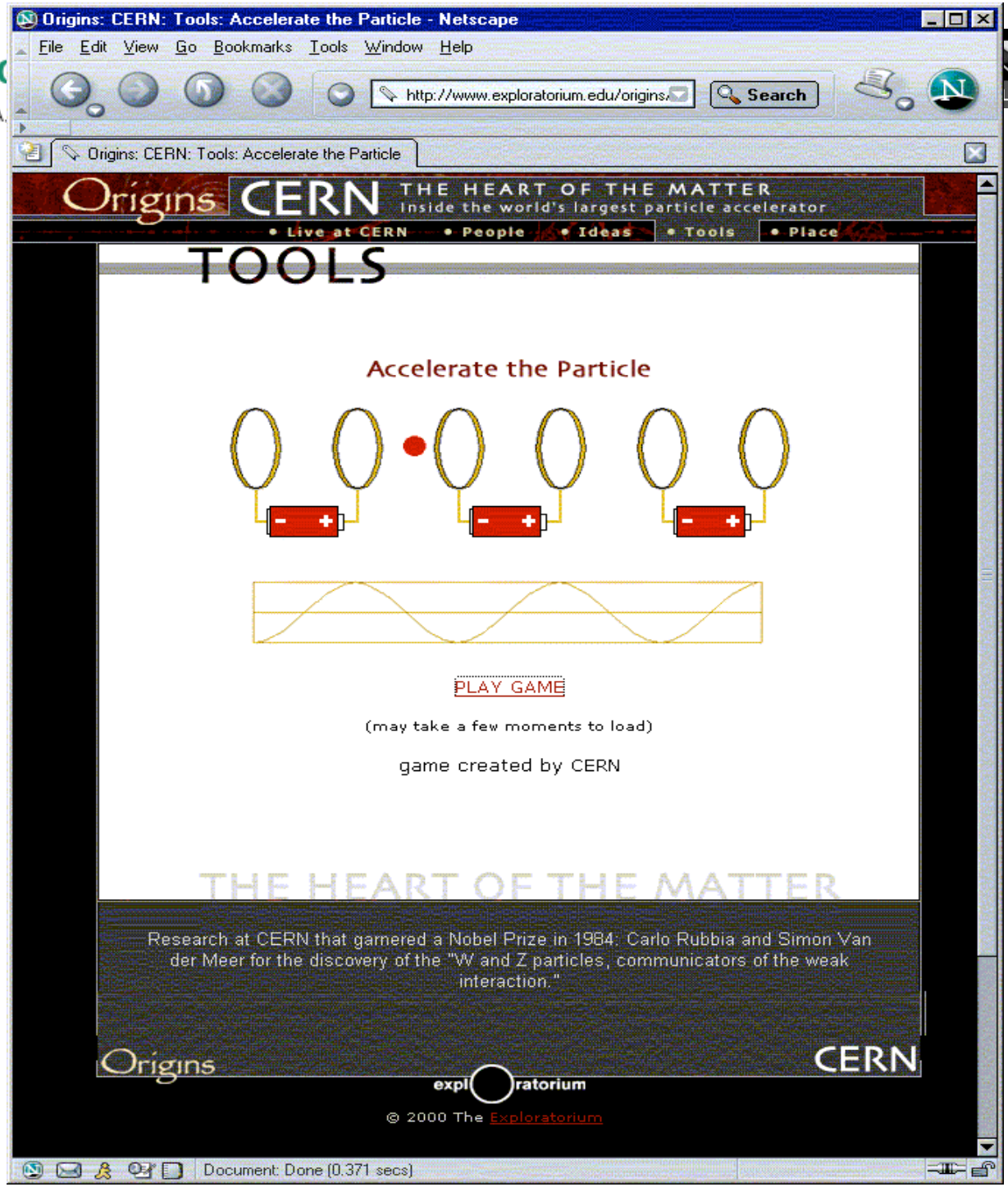
- Investigate the development and use of *meta-environments* for new game domains
  - Support generation, modification, and construction techniques and tools
  - Target (non-traditional) game domains relevant to artists, scientists, humanists, software developers, gamers, etc.

Related R&D efforts

- visual and performing arts
  - e.g., *machinima*
- science and technology education
  - informal education in science
- humanities and social sciences
  - graphic narratives for storytelling
- alternative game cultures and venues
  - hot rod game machines and *GameCon's*

Informal Science Education as a Game Grid Community?

- Quantum Physics Game
- Classical Physics Game
- 3D MEMS Device Design as new game?
- MEMS Device vs. Mighty Mite game?


Origins: CERN: Tools: Accelerate the Particle - Netscape
File Edit View Go Bookmarks Tools Window Help
http://www.exploratorium.edu/origins/
Search
Origins: CERN: Tools: Accelerate the Particle
Origins CERN THE HEART OF THE MATTER
Inside the world's largest particle accelerator
• Live at CERN • People • Ideas • Tools • Place
TOOLS
Accelerate the Particle
PLAY GAME
(may take a few moments to load)
game created by CERN
THE HEART OF THE MATTER
Research at CERN that garnered a Nobel Prize in 1984: Carlo Rubbia and Simon Van der Meer for the discovery of the "W and Z particles, communicators of the weak interaction."
Origins
CERN
exploratorium
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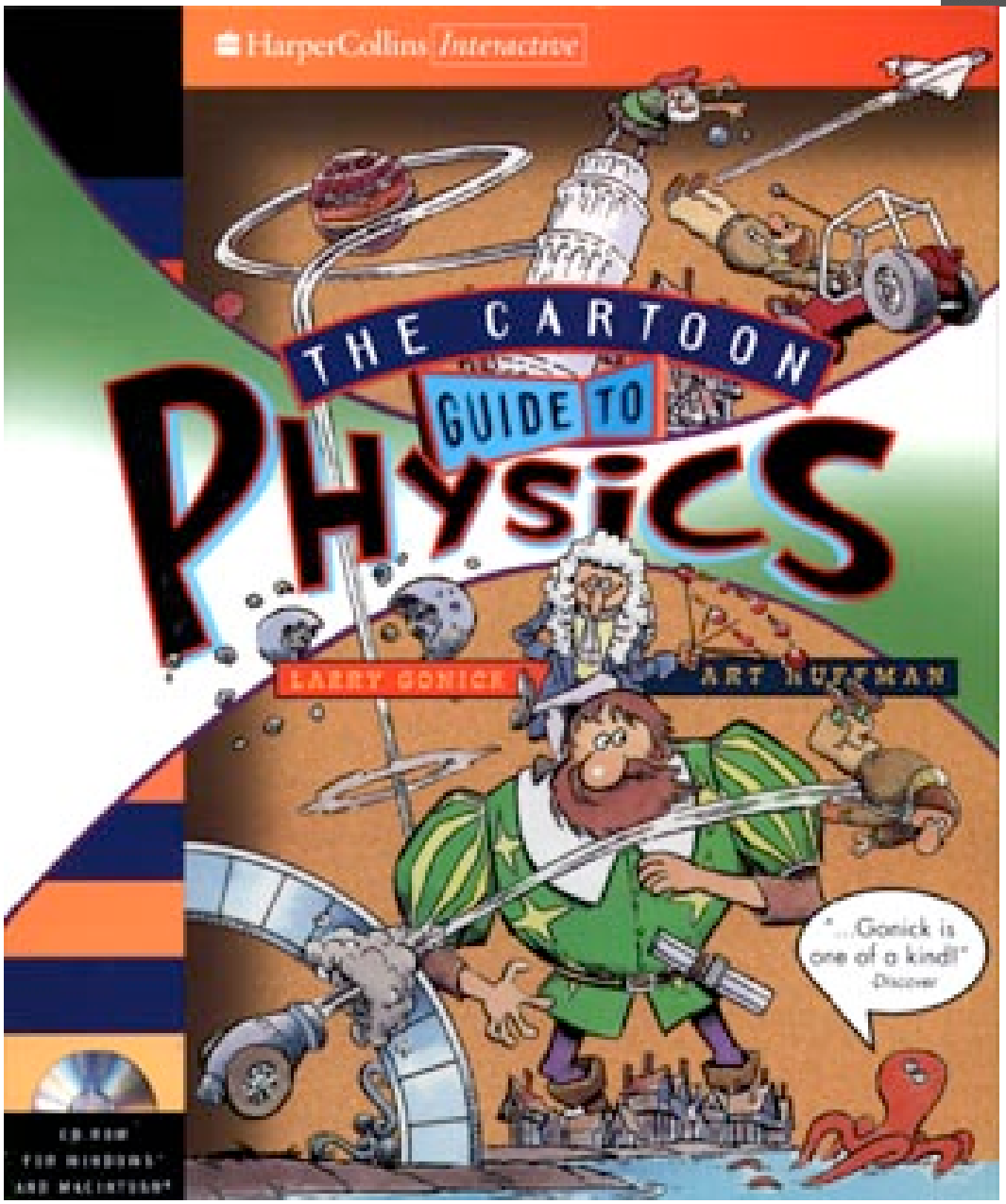
HarperCollins Interactive
THE CARTOON
GUIDE TO
PHYSICS
LARRY GONICK
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"...Gonick is one of a kind!"
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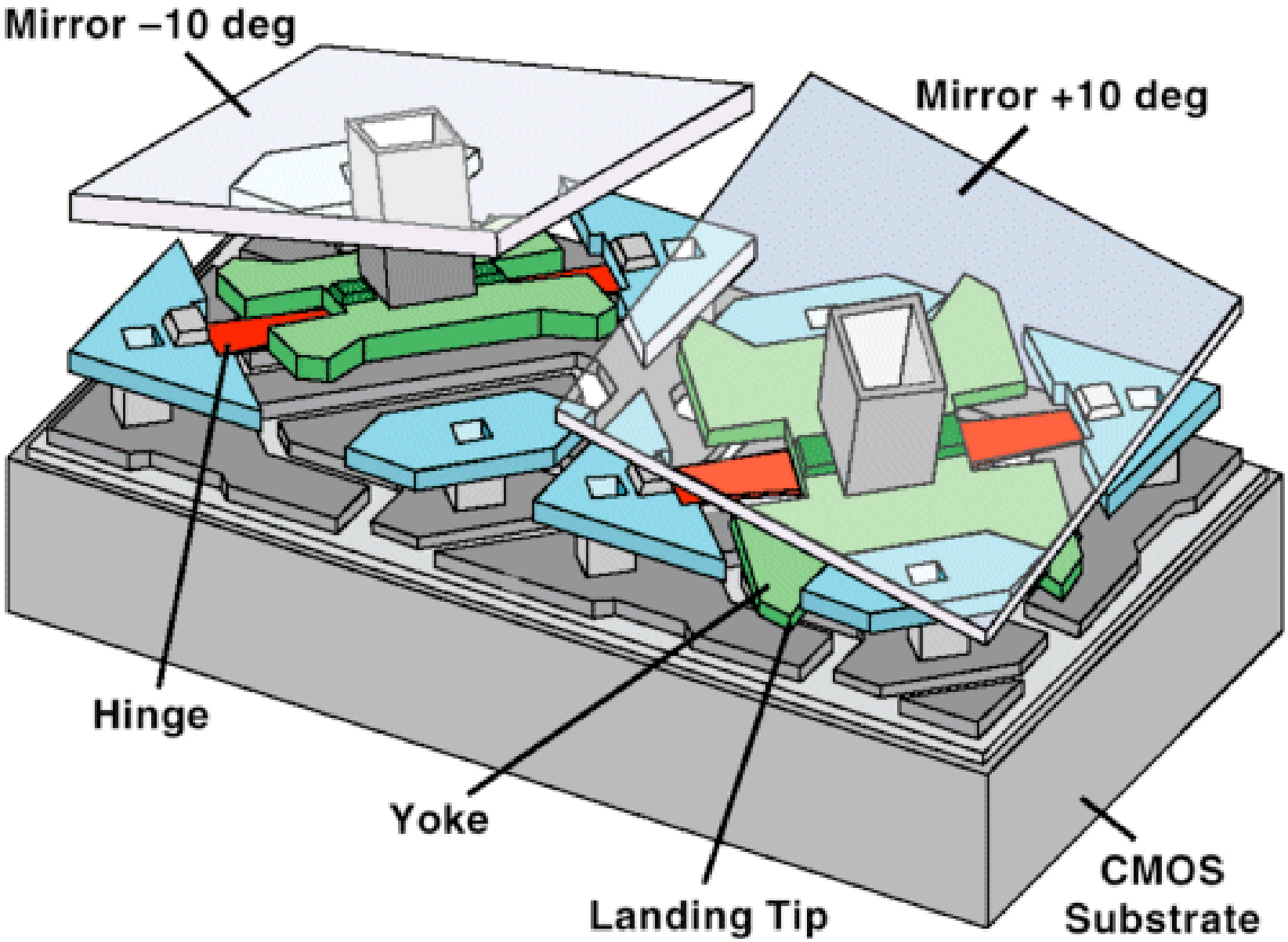
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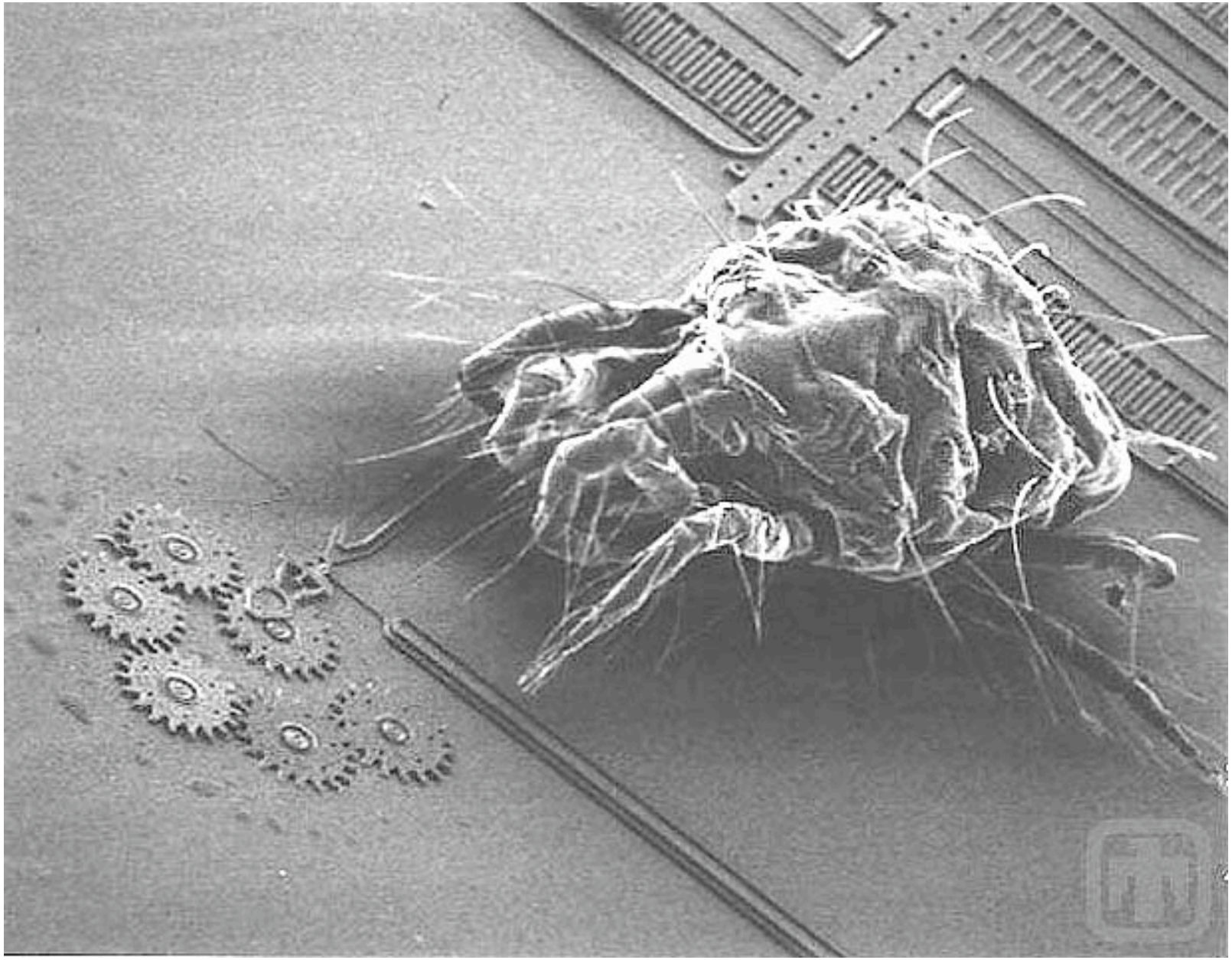
Substrate



Hot Rod Computing Culture

- Examples of "open hardware" mods applied to realize a *hot rod* PC (for computer game playing)
- Venue for hot rod PCs: QuakeCon
  - QuakeCon2002 LAN party w/>1700 PCs
  - QuakeCon2005 LAN party w/>5200 PCs
- Other large LAN parties appearing as meeting place for hot rod PCs

Coca-Cola
Y.COM

QuakeCon 2002 - News Archive - Netscape
File Edit View Go Bookmarks Tools Window Help
http://www.quakecon.org/archive.html
Search
Mail Home Radio Bookmarks RealPlayer
QUAKECON
2002
August 15-18, 2002
Mesquite Convention Center
Mesquite, Texas
THE WORLD'S PREMIER MULTIPLAYER GAMING EVENT
news
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tournament
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SPONSOR SPOTLIGHT
If you are under the age of 18 and plan to attend QuakeCon, then you MUST have a parent or legal guardian sign the following waiver, and then bring it with you to QuakeCon.
Select either: Word .doc, plain text, or .pdf format.
QuakeCon on TV again!
QuakeCon will be hitting the small screen once again! Starting today and running throughout the week G4 - TV 4 Gamers will be running a show with heavy focus on QuakeCon 2002. The show is called Pulse, and you can get more information and peruse the schedule on this page here. G4 is available to many satellite and digital cable subscribers.
9:56PM EDT, 8.25.2002 -Nok
www.quakecon.org
New movie
I was just sent a cool new addition to the QuakeCon 2002 video library. The employees of Netzone Centers in Houston have put together a 7 minute, 24mb video of the event. It chronicles their trip to Mesquite and the excitement they found there. Go watch it now!
The camera men/editors are red.falcon (Lawrence Johnson), Lightning Quick (Josh Garcia), Warrenkreuk (Warren Akhtar), and Wolfwood (Brian Buffington)
Good work guys!
QuakeCon 2002 is brought to you by:
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ATi
VIA we connect
AMD
ASPYR
ACTIVISION
LINKSYS
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Related Research

- Free/Open Source Software Development
- *Fourth* most popular area for F/OSSD with >10,000 projects on SourceForge.org
- Tools, techniques, and concepts for
  - Game development (e.g., game modding)
  - F/OSSD, and
  - Emerging game grid domains (physical sciences, nanotechnology, visual/performing arts, massively multi-participant worlds for living narratives, GameCons, etc.)

  can be brought together for mutual benefit.

Conclusions

- Game Grid partners are jointly conducting R&D in computer game culture and technology
- Breaking down barriers between art, science, technology, culture through computer games, game environments, and experiences
- Creating a new generation of informal learning tools and techniques, together with a global community of developers and users, through a massively shared, participatory computing grid.