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IEEE Santa Clara Valley Section Chapters:



REVOLUTIONARIES

1401 N. Shoreline Blvd
Mountain View, CA 94043
650.810.1010

DATA STORAGE IN THE FLASH MEMORY REVOLUTION

08.20.12

CHM Presents: Data Storage in the Flash Memory Revolution

7 pm **Museum Welcome and Introductory Remarks**

John Hollar, President & CEO. @jchchm
Computer History Museum

IEEE Remarks

Brian Berg, Chair
IEEE Santa Clara Valley Section

Dr. Gordon Day, President
IEEE

Program Discussion

Dr. Eli Harari, Inventor & Entrepreneur in
conversation with Jonathan Fortt, Technology
Correspondent *CNBC*, Silicon Valley

8:15 pm **Audience Q&A**

8:30 pm **Unveiling & Dedication of IEEE Milestone Plaque**

Dr. Gordon Day will unveil the IEEE Milestone
Bronze Plaque



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YouTube.com/computerhistory

ABOUT THE MUSEUM

The Computer History Museum is the world's leading institution exploring the history of computing and its ongoing impact on society. It is home to the largest international collection of computing artifacts in the world, including computer hardware, software, documentation, ephemera, photographs, and moving images. The Museum brings computer history to life through an acclaimed speaker series, education programs, dynamic website, on-site tours, and exhibitions.



HOURS

Wed–Sun, 10am–5pm

ADMISSION

\$15 per ticket
(packages are
available)
Children
(12 or under):
Free

Senior / Student /
Active Military: \$12

EXHIBITS

Revolution: The First
2000 Years of Com-
puting

Babbage Difference

Going Places: Google
Maps with Street
View

PDP-1

MEMBERSHIP

Become a part of
our community and
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Museum member-
ship is a fun way for
technology fans to
show their passion
for computer history.
See the reception
desk for more in-
formation or visit us
online: [computerhis-
tory.org/membership](http://computerhistory.org/membership)

TONIGHT'S EVENT IS MADE POSSIBLE BY:

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UPCOMING EVENTS

September 13, 2012 at 7pm

CHM Presents Revolutionaries

The Financial Times and CHM Present: The Anthropology of Innovation

October 16, 2012 at 7pm

CHM Presents Revolutionaries

Microsoft Research's Rick Rashid in Conversation with John Markoff of The New York Times

To register for Museum events please visit computerhistory.org/events.

PROGRAM

Tonight we welcome physicist, inventor and entrepreneur Dr. Eli Harari. He will be interviewed about his life's journey from Israel to the UK, and then coming to America to study at Princeton and work in Silicon Valley. This journey culminated in the inventions that led to the use of Flash Memory for data storage, an essential component of every significant consumer electronics product on the market today.

Technology developed by Eli at Hughes Microelectronics in the 1970s led to the industry's first commercial floating gate electrically erasable programmable read-only memory (EEPROM) in 1978. Eli's EEPROM inventions proved essential to NAND Flash, a technology introduced by Toshiba in 1987. In 1989, Eli developed the System Flash architecture, which combined a processor, firmware and Flash Memory to fully emulate a disk drive. System Flash was the genesis of SanDisk, a company Eli co-founded that same year. While a simple-sounding concept, many obstacles had to be overcome before this architecture could make its mark in the marketplace. The System Flash concept is now married to NAND Flash Memory, and it has enabled an inexpensive, low-power and compact data storage medium that is the foundation of an industry expected to exceed \$26 billion in sales in 2012.

The dramatic impact of Eli's inventions was recognized by the IEEE History Committee in the form of an IEEE Milestone that will be dedicated tonight by IEEE President Dr. Gordon Day. The title of the Milestone is *The Floating Gate EEPROM*, and its citation reads

"From 1976-1978, at Hughes Microelectronics in Newport Beach, California, the practicality, reliability, manufacturability and endurance of the Floating Gate EEPROM -- an electrically erasable device using a thin gate oxide and Fowler-Nordheim tunneling for writing and erasing -- was proven. As a significant foundation of data storage in flash memory, this fostered new classes of portable computing and communication devices which allow ubiquitous personal access to data."

A special video, funded in part by local IEEE sections and chapters, will be shown which describes the IEEE Milestone program as well as this EEPROM/Flash Memory Milestone.



DR. GORDON DAY

Dr. Gordon Day currently serves as the 50th President of the IEEE. He spent most of his career in research and management at the National Institute of Standards and Technology. He has served as science adviser to Sen. Jay Rockefeller. He is a Visiting Fellow at the University of Southampton (UK) and a Visiting Scholar at the University of Sydney (Australia).

He is a past President of the IEEE Photonics Society and of IEEE-USA, and is a Fellow of IEEE, AAAS, the Optical Society of America, and the Institute of Physics (UK). He received BS, MS, and Ph.D. degrees in EE from the Univ. of Illinois.



DR. ELI HARARI

Dr. Eli Harari co-founded SanDisk Corp. in 1988, and served as its CEO from its founding until his retirement at the end of 2010. From 1973 to 1983, he held various management positions with Honeywell, Intel and Hughes Microelectronics. A Senior IEEE member with over 100 patents issued in the field of non-volatile memories and storage systems, his contributions have earned him widespread recognition including the 2006 IEEE Reynold B. Johnson Data Storage Device Technology Award and the 2009 Robert N. Noyce Medal.

Dr. Eli Harari has an MA and Ph.D. in Solid State Sciences from Princeton Univ., and a BS (Honors) degree in Physics from Manchester Univ. in the UK.



JONATHAN FORTT

Jonathan Fortt is a technology correspondent in CNBC's Silicon Valley Bureau where he covers the companies, startups and trends that are driving innovation in the industry, including in his Tech Check blog. Fortt was previously a Senior Writer at Fortune magazine where he covered both large technology companies such as Cisco, Hewlett-Packard and Microsoft, and trends including cloud computing and the smartphone revolution.

He appeared regularly on KNTV's Press:Here technology show, and analyzed tech trends on CNN's Quest Means Business. Along with a Fortune colleague, he conceptualized Techmate, a video series and column that appeared on Fortune.com and in the magazine's technology section.