

**SIGGRAPH 1990**

**17th International Conference  
On Computer Graphics and  
Interactive Techniques**

**Dallas Convention Center  
August 6th—10th**

# COURSE NOTES

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### **EMERGING USER- INTERFACE MEDIA: POTENTIALS AND CHALLENGES**

*Chair*

**Chris Schmandt  
MIT Media Lab**

*Lecturers*

**Walter Bender  
MIT Media Lab**

**Scott Fisher  
NASA Ames Research Center**

**Robert J. K. Jacob  
Naval Research Laboratory**

**Chris Schmandt  
MIT Media Lab**

# Chair's Introduction

## Emerging User Interface Media: Challenges and Potentials

This is the second year we have offered this course, and all of us have taught the material elsewhere at one time or another. The course will cover a broad range of topics having to do with media for future user interfaces. There will be four separate segments, covering four topic areas in detail, with a different lecturer for each. The notes are similarly divided. We'll go into as much detail as we have time for and hope to show some sample user interfaces using the various media we'll talk about.

Each of us "believes in" the particular medium we'll discuss. We work with it on a daily basis in our laboratories. We claim to understand its strengths and weaknesses, and have visions about how or why it might be useful. We have built interfaces using it and we'll talk about those. We'd like you to learn about the technologies, but more importantly we'd like you to learn practical details based on our collective experience. As the course title indicates, we believe these media will prove useful for some applications, but we'll discuss many problems or limitations in them which you must understand in order to employ them successfully.

We've described this course as "introductory" to reflect on its broad nature, but hopefully not on its outlook. We want you to come away from it thinking about the future and what kinds of interfaces *you* might be designing!

Chris Schmandt

## Lecturer biographies

### Chris Schmandt

Mr. Schmandt received his B.S. in Computer Science from MIT and an M.S. in computer graphics from MIT's Architecture Machine Group. He is currently a Principal Research Scientist and director of the Speech Research Group of the Media Laboratory at M.I.T. His research interests are focused on interactive computer systems and human-interface issues of synchronous and asynchronous communication. His work emphasizes voice interaction for telecommunication based applications, with a goal of describing and then emulating human conversational behavior.

### Robert Jacob

Dr. Jacob is a Computer Scientist in the Human-computer Interaction Lab at the Naval Research Laboratory in Washington, where is doing research on the use of eye movements in human-computer interaction techniques and also on formal specification methods for describing user-computer dialogues. He received his Ph.D. from John Hopkins University and is on the faculty of George Washington University, where he teaches courses in Computer Science. He recently served as Tutorials Chair for the ACM CHI'88 conference.

### Walter Bender

Mr. Bender is a principle research scientist at the MIT Media Laboratory and director of the lab's Electronic Publishing Group. The group is set up to redefine the fields of print, publishing and information retrieval. Bender is principle investigator of the Personal Computing Program. Since 1978, Bender has been a member of the Architecture Machine Group at MIT, where he received his MS in 1980. He received his BA from Harvard in 1977.

## **Scott Fisher**

**Mr. Fisher attended the Massachusetts Institute of Technology, where he held a research fellowship at the Center for Advanced Visual Studies from 1974 to 1976 and was a member of the Architecture Machine Group from 1978 to 1982 while participating in development of the 'Aspen Movie Map' videodisc project and several stereoscopic display systems for teleconferencing and telepresence applications. He received the Master of Science degree in Media Technology from MIT in 1981. His current research interests focus primarily in stereoscopic imaging technologies, interactive display environments and the development of media technology for representing 'first-person' sensory experience. Mr. Fisher is currently working with other researchers at NASA to develop a multisensory 'virtual environment' workstation for use in Space Station teleoperation, telepresence and automation activities. Prior to the Ames Research Center, Mr. Fisher has served as Research Scientist with Atari Corporation's Sunnyvale Research Laboratory and has provided consulting services for several other corporations in the areas of spatial imaging and interactive display technology.**

**Schedule and Contents**  
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**Challenges and Potentials**

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**Display Technology – Bender**

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**Interactive Stereoscopic Imaging – Fisher**

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