

# VRST'99 - Virtual Reality Software and Technology – Final Programme

December 20-22<sup>nd</sup> 1999



University College London  
Gower Street  
London WC1E 6BT

UK



Sponsored by ACM SIGGRAPH and ACM SIGCHI

Also sponsored by the European ACTS Project COVEN:  
Collaborative Virtual Environments

Additional sponsorship from: SGI, Virtual Presence, and Swedish Institute of Computer Science (SICS)



## Events at a Glance

Time	Place	Monday 20th	Event
10:00-11:30	Gustave Tuck	Keynote Session	Augmented Reality
11:30-11:40		BREAK	
11:40-01:10	Gustave Tuck	Paper Session	VE Systems and Evaluation
01:10-02:30		Lunch	
02:30-04:00	Gustave Tuck	Paper Session	Shared VE Trials and Applications
04:00-04:30		BREAK	
04:30-06:00	Gustave Tuck	Paper Session	Distributed Virtual Environments
07:45-	Hotel	Dinner	From Cave Men to Men in CAVES

Time	Place	Tuesday 21st	Event
09:00-10:30	Gustave Tuck	Keynote Session	Networks and walkthroughs
10:30-11:00		BREAK	
11:00-12:30	Gustave Tuck	Paper Session	Multiresolution and Control
12:30-02:00		Lunch	
02:00-03:30	Gustave Tuck	Paper Session	Human Interaction
03:30-04:00		BREAK	
04:00-06:00	Gustave Tuck	Paper Session	Modelling and Sketching

Time	Place	Wednesday 22nd	Event
09:00-01:00	Pearson 229	Short Papers	15 minute paper presentations
09:00-05:00	Pearson G22	Tutorial	The Art and Science of 3D Interaction
09:00-01:00	Pearson 214	Tutorial	Visibility: problems, techniques and applications
02:00-04:00	Pearson 229	Panel	Virtual Reality and Art

## Monday 20th December, 1999 - Papers

### **10.00-11.00 Keynote Session**

Gustave Tuck Lecture Theatre, Chair Mel Slater

*Augmented Reality Systems for Surgical Procedures and for Tele-collaboration: Experiences and Future Prospects*  
Henry Fuchs

11.00-11.30

*The HiBall Tracker: High-Performance Wide-Area Tracking for Virtual and Augmented Environments*  
Greg Welch, Gary Bishop, Leandra Vicci, Stephen Brumback, Kurtis Keller, D'ardo Colucci

11.30-11.40 BREAK

### **Session 1 VE Systems and Evaluation**

Gustave Tuck Lecture Theatre, Chair Roger Hubbard

11.40-12.10

*Reality Portals*  
Karl-Petter Åkesson, Kristian Simsarian

12.10-12.40

*A Video-based Virtual Reality System*  
Haruo Takeda, Masami Yamasaki, Masami Yamasaki, Toshio Moriya, Tsuyoshi Minakawa, Fumiko Beniyama, Takafumi Koike

12.40-01.10

*Testbed Evaluation of VE Interaction Techniques*  
Doug Bowman, Donald Johnson, Larry F. Hodges

01.10-02.30 LUNCH

### **Session 2 Shared Virtual Environments: Trials and Applications**

Gustave Tuck Lecture Theatre, Chair Heedong Ko

02.30-03.00

*Patterns of Network and User Activity in an Inhabited Television Event*  
Chris Greenhalgh, Steve Benford, Mike Craven

03.00-03.30

*Coping with Inconsistency Due to Network Delays in Collaborative Virtual Environments*  
Ivan Vaghi, Chris Greenhalgh, Steve Benford

03.30-04.00

*The London Travel Demonstrator*  
Anthony Steed, Emmanuel Frécon, Gareth Smith, Duncan Pemberton, Anneli Avatare

04.00-04.30 BREAK

### **Session 3 Distributed Virtual Environment Systems**

Gustave Tuck Lecture Theatre, Chair Anthony Steed

04.30-05.00

*The DiveBone - An Application-Level Communication Infrastructure for Internet-Based CVEs*  
Emmanuel Frécon, Chris Greenhalgh, Mårten Stenius

05.00-05.30

*MAVERIK -- A micro-kernel for large-scale virtual environments*  
Roger Hubbard, Jon Cook, Martin Keates, Simon Gibson, Toby Howard, Alan Murta, Adrian West, Steve Pettifer

05.00-06.00

*Distributed Open Inventor: A Practical Approach to Distributed 3D Graphics*  
Gerd Hesina, Dieter Schmalstieg, Anton Fuhrmann, Werner Purgathofer

8.45pm - Conference Dinner Marlborough Hotel

*Computers: Cave Men to Men in CAVES*  
John A. Vince, University of Bournemouth

## **Tuesday 21st December, 1999 - Papers**

### **09.00-10.00 Keynote Session**

Gustave Tuck Lecture Theatre, Chair Don Brutzman

*Networked-based 3D Graphics*

Daniel Cohen-Or

10.00-10.30

*Navigating Through Sparse Views*  
Shachar Fleishman, Baoquan Chen, Arie Kaufman, Daniel Cohen-Or

10.30-11.00 BREAK

### **Session 4 Multi-Resolution Models and Control**

Gustave Tuck Lecture Theatre, Chair Daniel Thalmann

11.00-11.30

*A Method for Progressive and Selective Transmission of Multi-Resolution Models*  
Danny S.P. To, Rynson W.H. Lau, Mark Green

11.30-12.00

*A Market Model for Level of Detail Control*  
J.Howell, Y.Chrysanthou, A.Steed, M.Slater

12.00-12.30

*Levels of Detail(LOD) Engineering of VR Objects*  
Jinseok Seo, Gerard Jounghyun Kim, Kyo Chul Kang

12.30-02.00 LUNCH

### **Session 5 Human Interaction**

Gustave Tuck Lecture Theatre, Chair Alan Penn

02.00-02.30

*Visual Speech Analysis and Synthesis with Application to Mandarin Speech Training for Oral Deaf Children*  
Xiaodong Jiang, Yunlai Wang

02.30-03.00

*A Method for Sharing Interactive Deformations in Collaborative 3D Modeling*  
Hiroaki Nishino, Atsunori Sakamoto, Kouichi Utsumiya, Kazuyuki Yoshida, Kazuyoshi Korida

03.00-03.30

*Direct 3D interaction with Smart Objects*  
Marcelo Kallmann, Daniel Thalmann

03.30-04.00 BREAK

## **Session 6 Modelling and Sketching**

Gustave Tuck Lecture Theatre, Chair Edwin Blake

04.00-04.30

*Real Time Rendering of Deformable Parametric Free-Form Surfaces*

Frederick W. B. Li, Rynson W.H. Lau

04.30-05.00

*Modeling and Animation of Botanical Trees for Interactive Virtual Environments*

Tatsumi Sakaguchi, Jun Ohya

05.00-05.30

*Software Architecture for a Constraint-based Virtual Environment*

Terrence Fernando, Norman Murray, Kevin Tan, Prasad Wimalaratne

05.30-06.00

*Sketching a Virtual Environment: Modeling Using Line-Drawing Interpretation*

Alasdair Turner, Dave Chapman, Alan Penn

## **Wednesday 22nd December**

### **Parallel Session I Short Papers: 9.00-1.00**

Pearson Building Room 229, Chair Mel Slater

*Formations and Collaborative Virtual Environments*

Dave Lloyd, Steve Benford

*Meetings for real - Experiences from a series of VR-based project meetings*

Olov Stahl, Bengt Serenius, Gustave Taxén

*Simple User-Centered HMD Calibration for Augmented Reality*

Anton L. Fuhrmann, Dieter Schmalstieg, Werner Purgathofer

*The Kahun Project: CVE technology development based on real world application and user needs*

Daphne Economou, William L. Mitchell, Steve Pettifer, Adrian West

*Perceptual continuity, and the relaxing of synchronisation in networked virtual environments*

Steve Pettifer, Adrian West

*Interactive Virtual Studio & Immersive Viewer Environment*

Laehyun Kim, Heedong Ko, Moonho Park, Hyeran Byun

*Constraint-based Task Planning in Virtual Assembly*

Hanqiu Sun, Tong Ngai Man, Wu Lam Fai

*Networking Components for Distributed Virtual Environments*

M. Oliveira, D. Brutzman, J. Crowcroft, Mel Slater

*A Real-Time Generation Algorithm of Progressive Mesh With Multiple Properties*

Guangzheng Fei, Enhua Wu

*Collision Detection and Response*

G. Hotz, A. Kerzmann, C. Lennerz, R. Schmid, E. Schmer, T. Warken

*Rudiments for a 3D Freehand-Sketch based Human-Computer-Interface for Large-Scale Virtual Environments*

Oliver Bimber

*Using Virtual Reality For Network Management: Automated Construction of Dynamic 3D Metaphoric worlds*  
 P.Gros, P.Abel, D.Loisel, C.Russo Dos Santos, J.P. Paris

*Visualising Logic Programs in Virtual Worlds*  
 T.Panayiotopoulos, S.Vosinakis, S. Kousidou, L. Balafa

**Parallel Session II - Tutorial, 9.00-5.00**

Pearson Building, Room G22

*The Art and Science of 3D Interaction*  
 Doug A. Bowman, Ernst Kruijff, Joseph LaViola, Ivan Poupyrev

**Parallel Session III - Tutorial, 9.00-1.00**

Pearson Building, Room 214

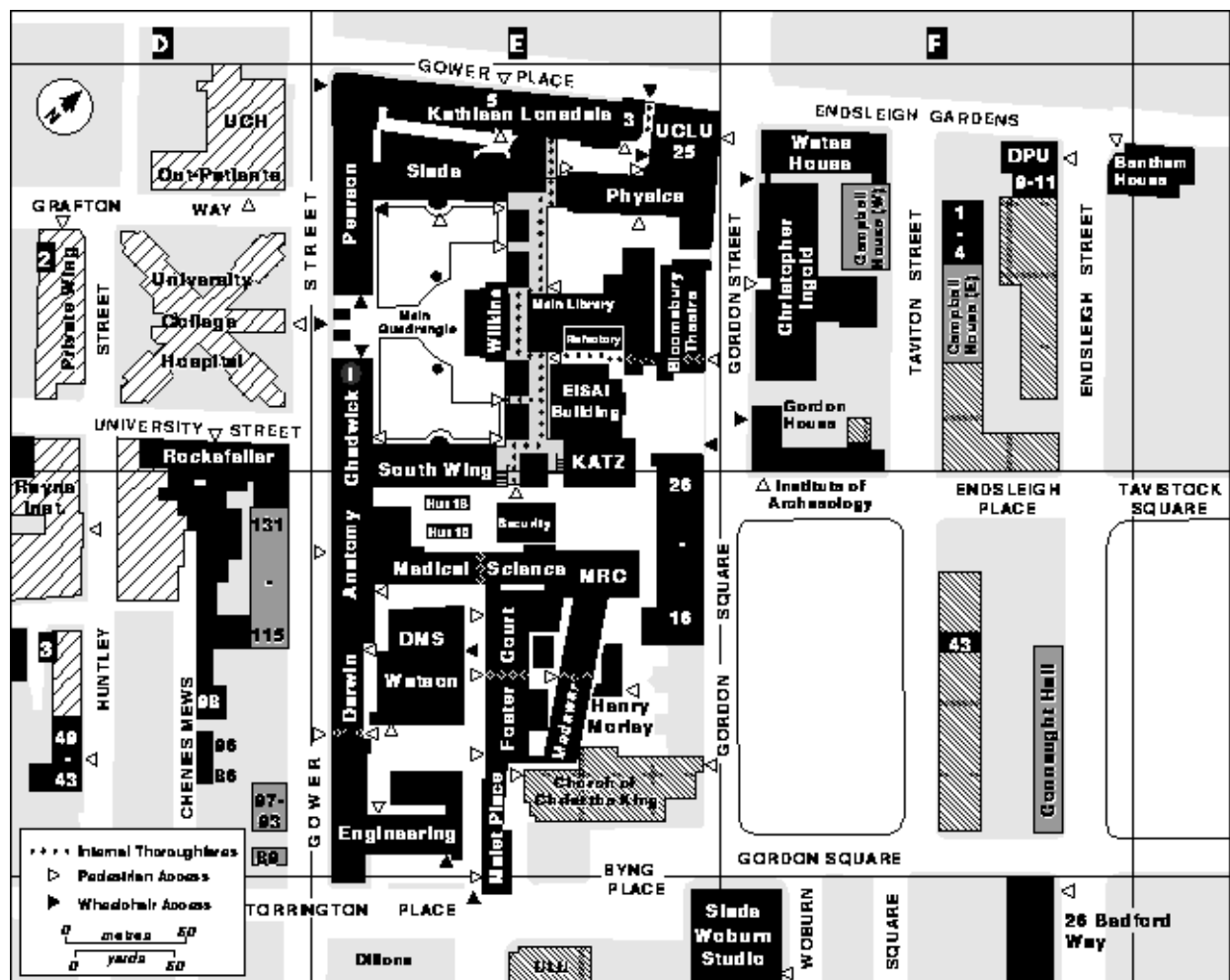
*Visibility: problems, techniques and applications*  
 Daniel Cohen-Ore, Yiorgos Chrysanthou, Anthony Steed, Vladi Koltun

**Parallel Session IV - Panel, 2.00-4.00**

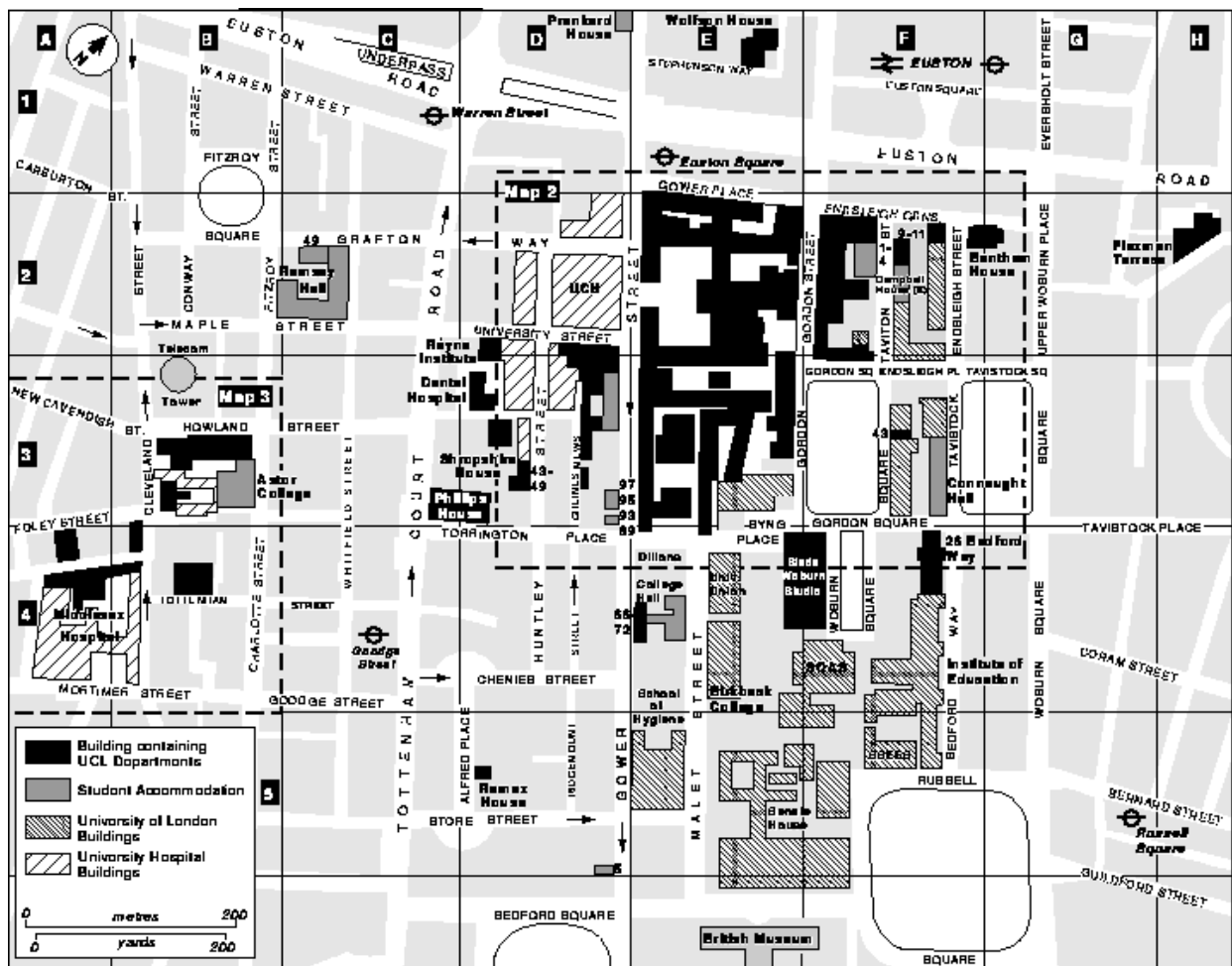
Pearson Building, Room 229, Chair Lennart Fahlen

*Virtual Reality and Art*  
 Lennart Fahlen, John Bowers, J. Michael Moshell, Matt Adams, Mel Slater, Sharon Springel

**UCL Gower Street Site**



# UCL and Surrounding Environment



Note that there are many cafes and restaurants around the Tottenham Court Road, Goodle Street, and Charlotte Street areas.