LOCATION:

The workshop is held in Torgersen Hall, Room 3050, a new high tech facility on the Virginia Tech campus in Blacksburg, Virginia. Maps with directions are posted at

http://www.sv.vt.edu/visit/directions.html

LODGING:

On campus:
- Donaldson Brown Hotel & Conference Center
  Located next to Torgersen Hall
  http://www.dbhcc.vt.edu
  Reservations: 540-231-5156

Near campus:
- Clay Corner Bed & Breakfast, 2 blocks
  401 Clay Street
  Reservations: 540-953-2604

- Sheraton Four Points, 3 blocks
  900 Prices Fork Road
  Reservation: 800-325-3535
  Desk: 540-552-7001

Closest Off Campus:
- Amerisuites Hotel, 1 mile
  1020 Plantation Road, just off Prices Fork Rd.
  Reservations: 800-833-1516
  Desk: 540-552-5636

- Best Western Red Lion Inn, 1 mile
  900 Plantation Road, just off Prices Fork Rd.
  Reservations: 540-552-7770

REGISTRATION: *DEADLINE: May 3, 2002*

No registration fee. To register simply email the information below to diverse@vt.edu .

Name: _____
Title: _____
Organization: _____
Address: _____
City: _____
State: _____ Zip: _____
Work Phone: _____
E-mail: *if different from sender*_____
Web site:___*if available*_____
Optional: give us a brief description of your
        interest in VEs

Workshop Presenters:

DIVERSE:
John Kelso: Computer Science Dept.
   http://bleen.sv.vt.edu/~kelso/blurb.html
Lance Arsenault: Computer Science Dept.
   http://thor.sv.vt.edu/

VE Interface Development:
Doug Bowman: Computer Science Dept.
   http://people.cs.vt.edu/~bowman/

3D Scenegraph conversion:
Jason Lockhart,
 Media Development and Emerging Technology
   http://www.multimdedia.vt.edu/
Ron Kriz: Engineering Science and Mechanics
   http://www.sv.vt.edu/krizbio.html

Virginia Tech presents a free workshop on
Virtual Environments Using DIVERSE™

May 20- 21, 2002
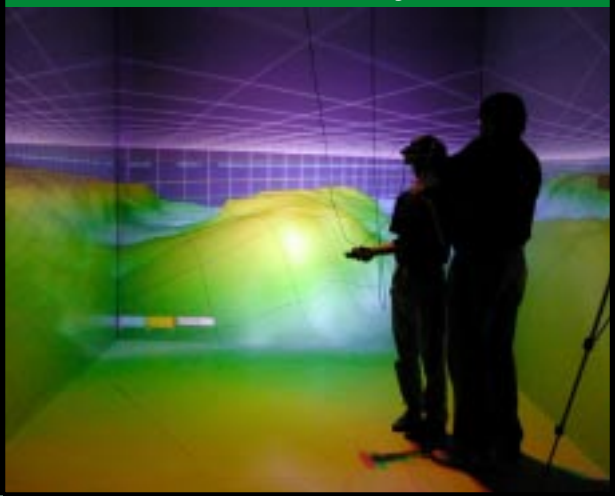
Virtual Environments Using DIVERSE™

Assumptions:

Participants will
- have identified a need for VE applications in their research or teaching.
- know basic UNIX shell commands.
- be familiar with object-oriented programming, is encouraged but not required.

Audience
- Researchers
- Developers / Domain Experts
- Engineers and Scientists

Day 1: Device Independent Virtual Environment - Reconfigurable, Scalable, Extensible (DIVERSE)

Educational Objectives:

Understanding:
- VE software
- DIVERSE Toolkit (DTK)
- DIVERSE interface to Performer™ (dgiPf)
- remote and shared memory

Learn to:
- configure and display 3D data without programming by using DSOs
- write a VE application
- configure for different delivery, methods, input devices, and techniques
- write configuration programs for different hardware
- simulate VE devices
- network and distribute applications

Day 2:

AM: Hands on time with the CAVE™, I-Desk™, and Desktop Simulator. Working across scalable platforms using DIVERSE.

PM: Breakout sessions (optional):

1. **Bring & configure your laptop for DIVERSE**: We will help you set up DIVERSE to run on your laptop computer. Minimum configuration: e.g. Dell™I Pentium-III™ with GeForce-2™ graphics card, 2.5G free disk space, GNU/Linux.

2. **Converting VRML and 3D Model scenegraphs**

Convert 3DStudio™ and VRML scenegraphs into formats that load into DIVERSE in a CAVE or desktop simulator.

3. **Lecture on User Interface Development**.

Educational Objectives:

- Understanding of VE User Interfaces
- Complexity
- Interactivity
- Utility
- Hows and Whys
- Ability to design usable interfaces
- Understanding of VE Usability Characteristics
- Basic Knowledge of VR Hardware
- Appreciation of VE Usability Engineering and Evaluation Techniques
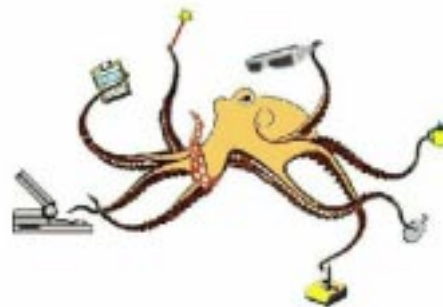
Building Virtual Environment (VEs) that are Reconfigurable, Scalable, and Extensible with the DIVERSE graphics interface for Performer

Attendees will learn how to construct applications using DIVERSE (Device Independent Virtual Environments - Reconfigurable, Scalable and Extensible).

DIVERSE is a C++ application programming interface (API). With DIVERSE users can write Performer based applications that run on a variety of display platforms such as CAVEs, I-Desks, HMDs (Head Mounted Displays), desktops and laptops without modification of the applications' code.

The basic elements that are common to virtual environment applications are explained, followed by several short examples of how these features are implemented in DIVERSE.

Attendees construct a virtual environment application program using the 3D models. Program development is on a PC desktop, and will run on several immersive VE systems.

Attendees learn about generic input devices and how to use emulators for unavailable devices. Various interaction techniques using these devices are presented, and attendees learn how to change interaction techniques without needing to modify their application.

The concepts of local and remote shared memory are presented, as well as how they can be used to represent the state of physical or virtual devices, and how to share information between two or more remote applications.

Demonstration of how shared memory facilitates the transparent switching between different data sources, both local and networked, without needing to inform running application.