

LOCATION:

The workshop is held in Torgersen Hall, Room 3080, 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
- Holiday Inn, 3 blocks
900 Prices Fork Road
Desk: 540-552-7001

Closest Off Campus:

- Amerisuites Hotel, 1 mile
1020 Plantation Rd., just off Prices Fork Rd.
Reservations: 800-833-1516
Desk: 540-552-5636
- Best Western Red Lion Inn, 1 mile
900 Plantation Rd., just off Prices Fork Rd.
Reservations: 540-552-7770

REGISTRATION: DEADLINE: August 13, 2004

No registration fee. To register simply email the information below to rkriz@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: Introduction and API Basics:**

John Kelso: National Institute for Standards and Technology (NIST), Department of Commerce. Scientific Applications and Visualization Group
john.kelso@nist.gov

DIVERSE Application Development:

Dan Larimer, Opentech Inc.
<http://www.opentechinc.com>

**Using DIVERSE for Non-programmers:
VRML, Scientific Visual Data Analysis
Applications, and Scenegraph Conversion:**

Ron Kriz: Director of UVAG and Associate Professor in the Department of Engineering Science and Mechanics

<http://www.sv.vt.edu/krizbio.html>

**Using DIVERSE on the DIVERSE Adaptable
Display System (DADS) (VT-CAVE™):**


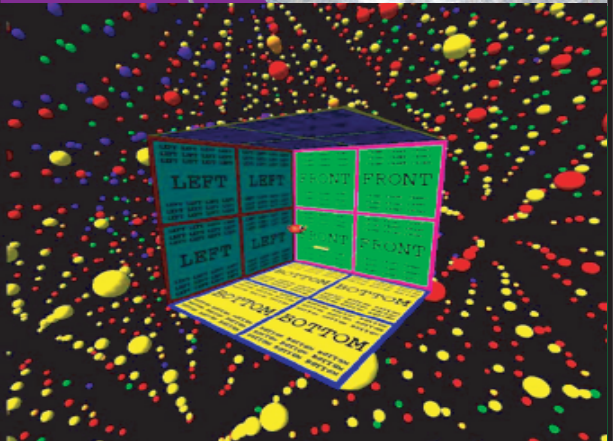
Patrick Shinpaugh: UVAG VE Programmer and System Administrator: shpatric@vt.edu

Institute for Critical Technology and Applied Science presents a free workshop on ...


Virtual Environments

Using DIVERSE™

for nonprogrammers and programmers

August 16 -17, 2004



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: DIVERSE Basics and 3D scenegraphs

AM: Working with 3D scenegraphs in DIVERSE

Start: 9:00AM

- DIVERSE quick overview: DPF - DTK
- Creating simple VRML 3D scenegraphs
- DIVERSE without programming: Diversify
- Build simple scripts using VRML and Diversify
- Convert 3DStudio™ and AutoCAD scenegraphs

----- LUNCH (your on your own) -----

PM: DIVERSE Basics

Start: 1:00PM

- Introduction and basic concepts
- Using command line tools
- Creating interfaces using existing DSOs
- Running applications across different platforms: CAVE, I-desk, and desktop simulator

Day 2: DIVERSE Programming and DADS

AM: Introduction to DIVERSE programming

Start: 9:00AM

- Scenograph basics
- DSOs and call backs

Day 2: AM (continued)

- DTK shared memory
- Build and Install

PM: DIVERSE Adaptable Display System (DADS)

Start: 1:00PM

- DADS overview
- How to use DADS
- Demonstration in the VT-CAVE

Course Educational Objectives:

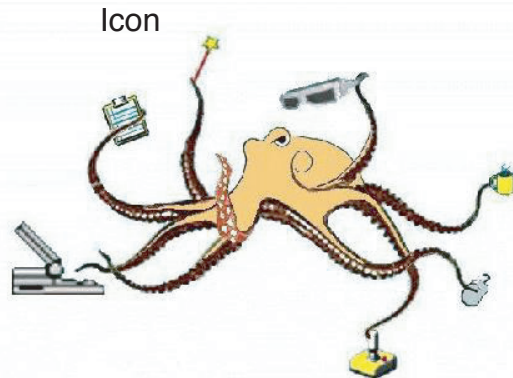
Understanding:

- Basic knowledge of VE Hardware
- VE API Software basics
- DIVERSE Toolkit (DTK)
- DIVERSE interface to Performer™ (DPF)
- DSOs and shared memory concepts

Learn to:

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

DIVERSE API



Working with Virtual Environment (VEs) that are Reconfigurable, Scalable, and Extensible with the DIVERSE™ graphics interface for SGI's OpenGL Performer™

DIVERSE is a C++ application programming interface (API). With DIVERSE users can use existing applications or write their own 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.

Attendees will learn how to use DIVERSE (Device Independent Virtual Environments - Reconfigurable, Scalable and Extensible) applications and configure simple fly-thru examples by using the Diversify application and configuring simple shell scripts. 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 3D model scenegraphs. 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.