

Visual Software International Supplying Advanced Computer Technology for University Parallel Processing Laboratories

Researchers and Students at Universities can Run Experiments to Measure “Program Development Speed” and “Run-Time Speed” for Significant Applications that will be Uniquely Solvable in these new Parallel Processing Laboratories

TOLEDO, OH – April 8, 2016 – Visual Software International announced the installation of breakthrough technology to the first Parallel Processing Laboratory at University of Toledo. Dr. Henry Ledgard, Professor of EE and Comp. Sci., is heading this program at the University.

Parallel Processing Labs will foster ongoing research at Universities to implement experiments to measure benefits of the *VisiSoft* CAD system on the Green Gene Machine - a parallel processor PC. It is anticipated that these labs will demonstrate - via repeatable experiment - how some of the world's most significant applications can benefit from the use of a totally new technology - designed for direct use by application experts. Their measures will demonstrate how these parallel PCs can cut the number of processors and power utilization to run the world's largest applications by 2 to 4 orders of magnitude (100 X to 10,000 X).



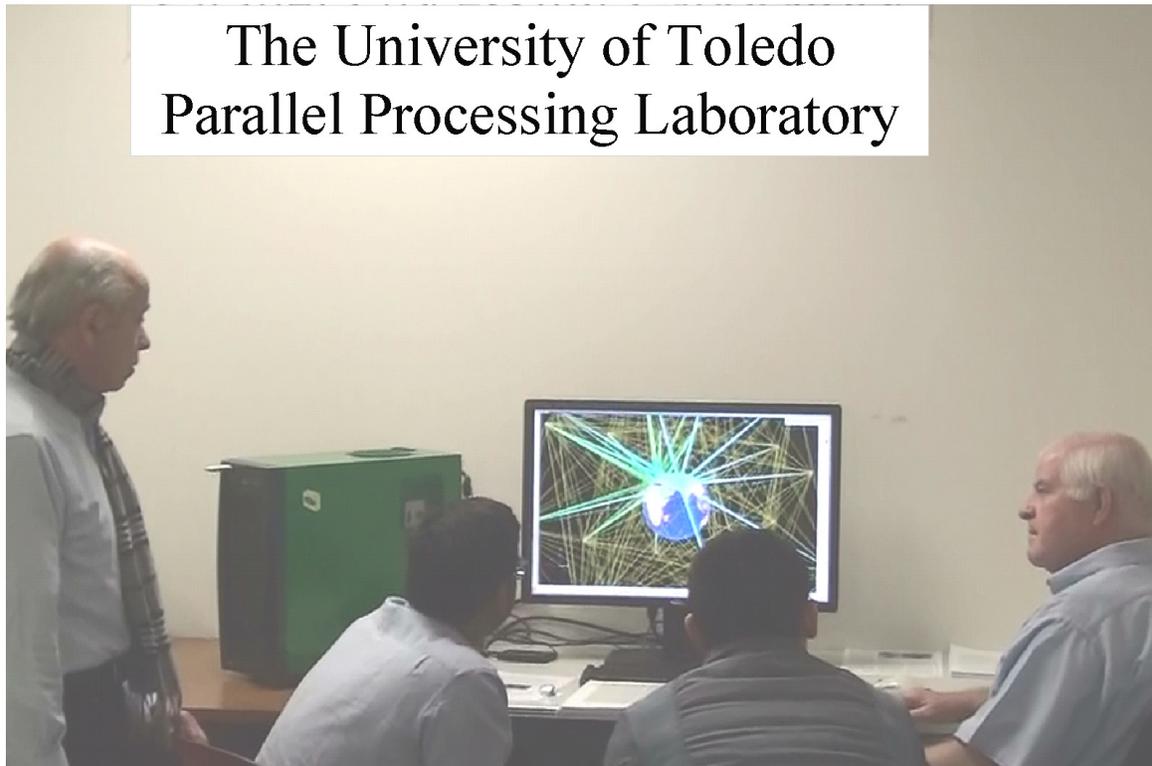
The initial Parallel Processing Laboratory is based on the **Green Gene 1**, an Intel-based 16-processor PC, running the *VisiSoft* CAD environment. The Green Gene models are expandable up to the “**Green Gene 32**”, with 2304 processors running in parallel.

These Laboratories are set up to aid students and researchers as they learn critical concepts and design principles required to run large-scale parallel processor applications. The *VisiSoft* CAD environment is based on an extension of *engineering mathematics*, *communication theory*, and *discrete event systems*, that reinforce the ability to develop solutions not possible with even the latest hardware/software technology.

In the presentation of the laboratory student comments were excellent. Graduate student Thomas Royko noted "On Thursday, I toured the Parallel Processing Laboratory at the College of Engineering. I was impressed by the new parallel computer that had been donated and the software that was demonstrated. I found the graphical schematics of the software simulations particularly interesting."

Graduate student Shuo Zhang made the comment "...the parallel processing lab is definitely a small step of something really big . . . the technology and knowledge presented by VisiSoft has the potential to inspire and revolutionize the industry, it should be taught in every college."

And graduate student Pranav Muppidi said “If you have a need for speed, look no further than VisiSoft, a CAD Programming Language that's much faster than traditional Programming Languages. It requires you to rethink everything you know about programming, for the better.”



Left to Right: Dr. Henry Ledgard, Pranav Muppidi, Shuo Zhang, Robert Wassmer

These Laboratories teach students and researchers how to simplify Transformations operating on complex hierarchies of Vector Spaces - Using:

- A CAD system based on English-like languages. Application Experts can read and write complex software directly.
- Hierarchical data structures to simplify complex heterogeneous data spaces
- Hierarchical rule structures to simplify complex transformations
- Engineering drawings to visualize software architecture and linearize complexity

Students witness the Separation of Architecture from Language, which is the next generation beyond Moore's Law based on:

- The Separation Principle (separation of data from instructions)
- The use of Engineering Drawings of software

Using visualization and English-like languages, users learn how properties of “*Independence*” and “*Understandability*” make parallel processor software easy to design, build and test.

Users of the Laboratory learn how to create:

- Independent Modules using engineering drawings
- Understandable Algorithms using the English-like language
- Inter-Processor (memory) Resources to share data while running concurrently
- Schedule and Synchronization statements to ensure proper synchronization of events
- Parallel Software Architectures & Algorithms using these facilities
- Graphical plots of Processor Utilization Efficiency to maximize speed

And they learn how to linearize complexity by creating architectures composed of deep hierarchies of modules based on deep hierarchical data spaces, and how to easily design system architectures that directly represent the true physical structure and operation of complex system facilities and events.

VisiSoft (VisiSoft.com) on the Green Gene Machine (GreenGeneMachine.com) opens up an entirely new generation of Parallel Computer Systems, with three to four orders of magnitude performance improvement over current approaches to major applications that need to be solved. The Power Savings are equally astounding, saving the same orders of magnitude improvement in Kilowatts. *The power savings alone pays for the cost of these new laboratories in a year.* Add to that similar improvements in productivity - in development as well as operations.