

**Andrei Missine**  
**#311-6660 Telford Ave**  
**Burnaby, BC V5H 2Z2**  
**(604) 928-7443**  
**andreim@sfu.ca**

**GeometryWare**  
**[www.sfu.ca/~andreim/gw/webstart.html](http://www.sfu.ca/~andreim/gw/webstart.html)**

Project Description:

GeometryWare is being developed as part of Research Assistantship with Dr Woodbury. The project is for teaching students about 3D geometry by allowing them to write code in Java to implement functionality.

The students complete assignments online by downloading problems and solving them. A single problem solving session consists of:

- downloading the problem description
  - writing Java code to solve the problem
  - uploading the code to the server where it is compiled
  - receiving and reflecting the compiled component into the framework
  - Testing the component by running a number of test cases on the component
  - If all test cases pass the student can then plug the newly created component into the framework and experiment with it
- Lastly, the student can submit the source code to the server to be marked at a later time

Some components include: BezierCurve, CrossProduct, ProjectPointOntoPlane, ProjectPointOntoLine, etc.

Project Goals:

The project targets students with both computing science and geometric / architectural backgrounds. The product is in version 1.0, fully allowing student / marker / prof interaction via the internet. It is also partially integrated with the existing SFU framework. Some possible extensions include:

- Introduction of demos over TCP/IP - allowing one prof instance to give demonstrations to many students (registered in the course)
- Ability to record these and allow students to later download them to view them independently

Project Other Comments:

The project requires a valid login to view; a visitor login will be issued upon request

---

Applicant's Institution: SFU  
Advisor's Name: Dr. Robert Woodbury  
Advisor's Contact: 13450 102 Ave. (SFU Surrey Campus)  
Surrey, BC V3T 5X3  
(604) 268-7501  
rw@sfu.ca

Submitted: Monday January 17, 2005 6:59 PM