

# BÁRBARA BELLAVER GONÇALVES

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[bellaver@gmail.com](mailto:bellaver@gmail.com)

[wiki.inf.ufrgs.br/wiki/index.php/Bárbara\\_Bellaver](http://wiki.inf.ufrgs.br/wiki/index.php/Bárbara_Bellaver)

55 (51) 8173-0049 (Cellular phone)

## COMPUTER SCIENCE BSC

Almost 10 years of academic research experience in different areas, including Computer Graphics, Chemistry and Social Science. I recently got my degree at Universidade Federal do Rio Grande do Sul ([UFRGS](http://www.ufrgs.br) - the federal university in Rio Grande do Sul state in Brazil ). I had a good academic performance. My GPA was 8.2.

Before I get into the computer university I developed some projects of my own in other areas (Chemistry and Social Science). Some of these projects were presented in international fairs and even received some prizes. Besides my own, I also worked in other people projects.

When it comes to Computer Science, I have been working with Computer Graphics for three years. So, I have three years experience working with C++, OpenGL and auxiliary GUI libraries such as [FTLK](#) (Fast Light Toolkit) and [GLUI](#). I also worked on a short animation movie developed using [Blender](#), a suite of tools for 3D creation. The IDEs I worked with were mainly Microsoft Visual Studio 6.0, Microsoft Visual Studio .NET 2003 and 2008. Subversion ([SVN](#)) is the version control system I generally use. To develop academic work not related to Computer Graphics, I worked with Java, PHP, Delphi and VHDL. Some of these works were for Linux environment. Therefore, I have basic to intermediate Linux knowledge.

I have already worked as a Chemistry Technician for two years. I also worked as an English teacher for almost three years, teaching since 8 years old children to companies' directors. These experiences taught me how to deal with different kinds of people and situations. After that, I worked for two years as a programmer and project manager of CityZoom, a full decision support system for urban planning. My knowledge of other areas helps me keep my mind open to new opportunities where computer science can be applied and explored.

Nowadays, I am part of Computer Graphics research group at UFRGS. My adviser is Professor [Manuel Menezes de Oliveira](#). My undergraduate thesis was a tool for debugging OpenGL Shading Language (GLSL). I am also working with a classmate on another graphics project, a HLSL (High Level Shading Language) to GLSL translator that is sponsored by Microsoft Brazil as part of the UFRGS-Microsoft Interoperability Lab.

So, I can say I have experience in dealing with people, researching and project development. Thus, it illustrates my main characteristic: passion for challenges and acquiring new knowledge. Responsibility, maturity, facility of learning new concepts and

adapting to new situations are also part of my personality. Details of the projects I worked on are described in the following pages.

## **AREA OF INTEREST**

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My area of research and development interest is related to all the aspects of Computer Graphics and Image Processing. I am also interested in understanding the "whys" that are everywhere in different areas. I like trying to find connections between areas to discover new opportunities.

## **PROFESSIONAL EXPERIENCE – COMPUTER GRAPHICS**

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### **COMPUTER PROGRAMMER HL2GLSL PROJECT**

[HL2GLSL](#) is a graphics project sponsored by Microsoft Brazil as part of the UFRGS-Microsoft Interoperability Lab. It is a translator between High Level Shading Language (HLSL) and OpenGL Shading Language (GLSL).

**May 2008 – Current:** I work as a C, C++, C# .NET programmer. With another student, I developed the translator mentioned above and, I am developing in parallel, a GLSL debugger that will be integrated to Microsoft Visual Studio.

### **COMPUTER PROGRAMMER AND MANAGER CITYZOOM PROJECT**

CityZoom is software developed by Simmlab, the Simulation and Modeling Laboratory at the university I attend. It simulates urban plans and regulations so that their effect on new building projects can be evaluated easily.

**March 2006 — March 2007: Programmer** I worked as a programmer on the 3D visualization module of the software, with C, C++ and OpenGL programming.

**March 2007 — September 2007: Manager** I was made manager of the project.

## **PUBLICATIONS**

**Title:** *GLSLDebugger*

**Principle Investigator and Author:** Bárbara Bellaver Gonçalves

**Co-author:** Manuel Menezes de Oliveira Neto

**Published in:**

XX Exhibition of Beginner Scientists (XIV Salão de Iniciação Científica) at UFRGS, and XVII Beginner Scientist's Fair (XI Feira de Iniciação Científica), December 2-6, 2002

*CityZoom — A Visualization Tool for the Assessment of Planning Regulations*  
by Professor Benamy Turkienicz, Bárbara Bellaver Gonçalves, and Pablo Grazziotin.

**Published in:** International Journal of Architectural Computing, Vol. 6, No. 1. (January 2008), pp 79-95.

**Title:** *CityZoom — A Visualization Tool for the Assessment of Planning Regulations*  
by Professor Benamy Turkienicz, Bárbara Bellaver Gonçalves, and Pablo Grazziotin

**First Prize:** The paper was presented by Pablo Grazziotin at the [2007 eCAADe conference](#) in Frankfurt, Germany on [September 27, 2007](#), and won first prize.

## PROFESSIONAL EXPERIENCE – OTHER AREAS

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### ENGLISH TEACHER

- **August, 2003 — December, 2005:** Teaching Brazilian employees and directors of companies, children and teenagers.

### WATER ANALYSES

- The three projects were developed at **Institute of Hydraulic Research (IPH - UFRGS)** and their area is Sanitary Engineering.

#### August — November, 2002

1. **Title:** *Salto Project (Projeto Salto)*  
**Principle Investigator and Author:** Luiz Fernando Cybis

#### March — September, 2001

1. **Title:** *Codisposition of solid hospital waste with solid urban waste (Codisposição de resíduos sólidos de serviços de saúde com resíduos sólidos urbanos)*  
**Principle Investigator and Author:** Luciane Felipe de Souza
2. **Title:** *Simulation of codisposition of residues of Manzate 800 with urban waste during the methanogenic phase. [Manzate 800 is a pesticide used in our region. Methanogenic means methane-producing.] (Simulação da codisposição de resíduos de Manzate 800 com resíduos sólidos urbanos durante a fase metanogênica)*  
**Principle Investigator and Author:** Ane Lourdes Marques de Oliveira

### QUALITY CONTROL TECHNICIAN INTERN

- **March — December, 2000:** Laboratório Sibrás Ltda., a pharmaceutical company. I worked in the quality control department as a technician intern. I

### TECHNICAL PAPER

**Title:** *Evaluation of water quality in parts of the rivers Rio Paranhana and Rio dos Sinos with focus on the public supply. (Avaliação da qualidade da água em trechos dos rios Paranha e dos Sinos com vista ao abastecimento público.)*

**Principle Investigator and Author:** Bárbara Bellaver Gonçalves

**Co-authors and co-workers:** Carla C. Muller, Melissa S. Sudbrack, Eudimar N. Carvalho, Luiz F. Cybis

#### Published in:

XIV Exhibition of Beginner Scientists (XIV Salão de Iniciação Científica) at UFRGS, and XI Beginner Scientist's Fair (XI Feira de Iniciação Científica), December 2-6, 2002

## EXTRACURRICULAR ACTIVITIES

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### STUDENT TO BUSINESS PROGRAM, 2008/1

This program was created by Microsoft and is developed by Microsoft Innovations Centers and partners Universities. It is a worldwide program, but is applied locally. In this program I learned the basics of C# programming and .NET framework. In the end, I received the mention of honor as the student with the highest grade and the best group final project.

### HIGH SCHOOL SCIENCE PROJECTS, 1999

**Title:** *The Preconceptions between Classes ("Os Preconceitos entre os Cursos")*

**Co-author:** João Paulo dos Santos da Silva

**Advisor:** Carmen Bica Beltrame

**Area:** Social Science

We investigated social ideas among students in a high school.

This project was shown at 3 exhibitions. The second and third exhibitions are affiliated with Intel Corporation's ISEF (Intel International Science and Engineering Fair):

1. *The 1st Science and Technology Exhibition of the Chemistry Course (1° Mostra de Ciências e Tecnologia do Curso Técnico de Química)*, September 27-28, 2000, Novo Hamburgo, Rio Grande do Sul, Brazil

2. *The 15th MOSTRATEC International Science and Technology Exhibition (15° Mostratec - Mostra Internacional de Ciência e Tecnologia)*, November 6-11, 2000, Novo Hamburgo, Rio Grande do Sul, Brazil

My project won second prize in the social science area, and therefore I was invited to the international exhibition below.

3. *Expociencia 2001 — 3rd Science and Technology Fair (Expociencia 2001 — 3° Feria de Ciencia y Tecnologia)* October 1-5, 2001, Lima, Peru

**Title:** *Organic Fertilizer (Fertilizante Orgânico)*

**Co-author:** Vanessa Czezelski Pereira

**Advisor:** Rosane Catarina dos Santos

**Area:** Chemistry

We studied the benefits of the organic fertilizer used by local strawberry farms.

This project was shown at the *1st Science and Technology Exhibition of the Chemistry Course (1° Mostra de Ciências e Tecnologia do Curso Técnico de Química)*, September 27-28, 2000, Novo Hamburgo, Rio Grande do Sul, Brazil

**CLASS LEADER, CHEMISTRY CLASS**

**FUNDAÇÃO ESCOLA TÉCNICA LIBERATO SALZANO**

**VIEIRA DA CUNHA HIGH SCHOOL, 1999-2000**