Cristian Tibirna

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Communication skills

- *English and French*: excellent;
- *Romanian*: mother's tongue;
- *German, Italian*: basic notions;
- *Verbal*: very good;
- *Writing*: excellent;
- *Conferencing*: excellent: scientific, teaching and general public presentations;

Education

Master Degree in Chemical Engineering   Laval University, Québec, 2000

Industrial chemistry engineer - State Diploma   Technical University "Gheorghe Asachi",
Iasi, Romania, 1992

Experience

Research professional   GIREF, Laval University,
Québec, 2000 – present

- Development of sophisticated software libraries for numerical modeling using the Finite Elements Method (*computing toolbox of a large auto industry manufacturer*);
- Development of parallel algorithms for numerical simulators;
- Installation, configuration and support to users for a parallel machine of Beowulf category;
- Scientific support in numerical simulation to members of a leading research group;
- Numerical modeling:
  - visco-elastic structures in large deformations;
  - fluid dynamics;
  - flow in porous and fractured media;
  - electromagnetism;
  - algorithms for inverse problems (*sp.* Electrical Capacitance Tomography);
- Mentoring of graduate students in numerical modeling;
- Management of computing infrastructure (Unix/Linux and Windows).

Adjunct faculty   Chemical Engineering Department, Laval University,
Québec, 2004 – present

- Teaching (in French) the compulsory chemical engineer curriculum courses
  - "Distillation and Extraction";
  - "Equipment Conception and Instrumentation";
  - "Mass Transfer".

Computing resources manager   Chemical Engineering Department, Laval University,
Québec, 1996 – 2000

- Management of heterogeneous networks (Windows, Linux and Unix).

Research assistant   Chemical Engineering Department, Laval University,
                                                                     Québec, 1995 – 1999

- Numerical simulation of the dynamics of a chromatographic column;
- NNFit (http://www.gch.ulaval.ca/nnfit/english);
- Software development for pedagogic projects.

Teaching assistant   Technical University "Gheorghe Asachi",
                                                                 Iasi, Romania, 1993 – 1995

- Teaching computer laboratory for the course "Pascal programming for engineers".

Scientific researcher   Romanian Academy, Oenology Laboratory,
                                                                 Iasi, Romania, 1992 – 1995

A list of my publications is available on request.

Skills

Very good development and handling of professional relations.

Scientific:

- Parallel programming in large scientific codes using MPI;
- Significant experience in using PETSc;
- Numerical analysis and numerical simulation;
- Solid knowledge of chemical engineering theory;
- Very easy learning of new mathematical, scientific and engineering concepts;
- Handle with ease new technologies in scientific analysis and computing.

Computing:

- Expert in object oriented programming with C++ and Python;
- Expert in code management tools: compilers, source managers (GIT, CVS, SVN etc.), bug trackers, documentation generators and more;
- Expert in building, configuration and administration of computer clusters;
- Programming of graphic interfaces (Qt, KDE);
- Creation of scientific documentation (books, using word processors and LaTeX);
- Computer network management (Unix, Linux, Windows);