

Robin Charles Gilbert

Summary

Doctor in industrial engineering and engineer in applied mathematics focused on operations research, optimization, artificial intelligence and data mining/processing. Significant experience in programming and computer management. Bilingual French and English.

Research Areas

Operation research, linear and nonlinear optimization, mathematical programming, stochastic programming, optimization heuristics, machine learning, data mining, data processing, statistical analysis, simulation, scientific computing, notions of financial mathematics.

Education

- 2006 – 2010 **Doctor of Philosophy**, *University of Oklahoma*, Norman OK, USA, *GPA: 4.0*.
Degree in Industrial Engineering prepared at the Laboratory of Optimization and Intelligent Systems (LOIS) of the School of Industrial Engineering of the University of Oklahoma.
- 2004 – 2006 **Master of Science**, *University of Oklahoma*, Norman OK, USA, *GPA: 4.0*.
Degree in Industrial Engineering prepared at LOIS.
- 2001 – 2004 **Diplôme d'Ingénieur / Master of Science**, *Polytech'Clermont-Ferrand*, Aubière, France.
Degree in Mathematics and Modeling Engineering. Took optional courses in financial mathematics.
- 1998 – 2001 **Diplome d'Etudes Universitaires Générales**, *Pierre and Marie Curie University*, Paris.
Degree in Mathematics, Modeling Engineering and Information Technologies. French undergraduate degree obtained for a course that lasts for at least two years.

Experience

- Jan 05 – May 10 **Research Assistant**, *University of Oklahoma*, Norman OK, USA.
Jan – Aug 04 Design of nonlinear classification and prediction techniques using Neural Networks, Support Vector Machines and kernel methods. Joint projects with the Manufacturing Laboratory of the School of Industrial Engineering and the National Weather Center.
- Oct – Nov 04 **Engineer**, *Sternberg Astronomical Institute*, Moscow, Russia.
Processing of observations of mutual events of natural satellites. Creation of a French website for the celestial mechanics department of the Sternberg Astronomical Institute.
- Sep, Dec 04 **Engineer**, *Institut de Mécanique Céleste et de Calcul des Ephémérides*, Paris.
May – Aug 03 Development of a video analysis program for mutual events of natural satellites. Creation of a database of international astronomical observations for the PHEMU 2003 campaign and the the VT-2004 program.
- Sep – Dec 03 **Research Assistant**, *Polytech'Clermont-Ferrand*, Aubière, France.
Sep 01 – Apr 03 Design of a finite elements scheme for solving a plasma potential flow model; Design of a finite difference scheme for solving a quasigeostrophic equation; Design of a branch and bound algorithm for solving the minimal cost k -edge subgraph problem (with applications to robust networks).

Teaching Experience

- Invited Lectures IE 6933 Support Vector Machines/Kernel Methods, IE 6933 Advanced Data Mining, IE 5643 Engineering Optimization, IE 5613 Multi-Criteria Optimization.
- Teacher Asst. IE 5643 Engineering Optimization, IE 5853 Applied Research Methods.

Languages

English	Fluent	<i>Proficient in speaking and writing English. Currently lives in the USA.</i>
French	Fluent	<i>Mother tongue.</i>
German	Basic knowledge	<i>Learned in high school. Was an exchange student in Germany.</i>

Computer Skills and Competences

Operating Systems

- Competent with Microsoft operating systems (Vista, XP, Server 2003). Long experience with historical OS such as DOS 1.x-6.x and Windows 3.x/95/98/Me/NT/2000.
- Competent with UNIX-like operating systems such as Solaris OS and the major distributions of Linux (Ubuntu, Fedora, openSUSE).

Programming Languages

- Knowledge of FORTRAN 77/90/95 and C/C++ and notions of Java.
- Notions of PHP, MySQL, CSS, and HTML.
- Knowledge of Bash shell and DOS/Windows batch files.

Software

- Experienced in MATLAB, Maple, CPLEX, GLPK, and SAS.
- Competent with Microsoft Office software and Rockwell Arena.

Additional Information

- Holds a French Private Pilot Certificate (1998) with single and multi-engine land ratings.
- Website administrator for the Laboratory of Optimization and Intelligent Systems of the School of Industrial Engineering of the University of Oklahoma.

Selected Publications

Book Chapters

R. C. Gilbert, T. B. Trafalis, and I. Adrianto. Support vector machines for classification. In *Wiley Encyclopedia of Operations Research and Management Science*. Wiley, Hoboken, NJ, USA, 2010. Under review.

T. B. Trafalis and R. C. Gilbert. Nonlinear programming. In A. R. Ravindran, editor, *Operations research and management science handbook*, Operations Research Series, chapter 2, pages 2.1–2.22. CRC Press, Boca Raton, FL, USA, 2008.

Journal Articles

N. V. Emelyanov and R. C. Gilbert. Astrometric results of observations of mutual occultations and eclipses of the galilean satellites of jupiter in 2003. *Astronomy and Astrophysics*, 453:1141–1149, 2006.

R. C. Gilbert, S. Raman, T. B. Trafalis, S. M. Obeidat, and J. A. Aguirre-Cruz. Mathematical foundations for form inspection and adaptive sampling. *Journal of Manufacturing Science and Engineering*, 131(4):041001–1–041001–8, 2009.

R. C. Gilbert and T. B. Trafalis. Quadratic programming formulations for classification and regression. *Optimization Methods and Software*, 24(2):175–185, 2009.