

## Summary

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

## Research Areas

Operations research, linear and nonlinear optimization, mathematical programming, stochastic programming, optimization heuristics, machine learning, data mining, data processing, statistical analysis, simulation, scientific computing, financial engineering.

## 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 engineering.

## Experience

- Since May 11 **Software Engineer**, *Intel Corporation*, Hillsboro OR, USA.  
Work on large scale optimization problems in computational lithography and pixelated mask technology.
- Oct 10 – May 11 **Postdoctoral Research Associate**, *University of Oklahoma*, Norman OK, USA.  
Study of times series of energy prices, rare event detection/forecasting on the energy market, and construction of a kernelized nonlinear component analysis for energy prices.
- July – Oct 10 **Analyst**, *PCI Power Costs Inc.*, Norman OK, USA.  
Development of testing tools for a power generation optimization engine. Performed a quality analysis of the optimization engine features, and wrote a technical documentation for the engine.
- 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 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 VT-2004 program.

## Teaching Experience

- Invited Lectures at OU IE 6933 Support Vector Machines/Kernel Methods, IE 6933 Advanced Data Mining, IE 5643 Engineering Optimization, IE 5613 Multiple Objectives Optimization, IE 4970 Data Driven Models and Decisions.
- Teacher Asst. IE 5643 Engineering Optimization, IE 5853 Applied Research Methods.

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## References

- T. Trafalis** Professor at the School of Industrial Engineering (OU) and director of the LOIS laboratory.  
☎ 1-405-325-4347, ✉ ttrafalis@ou.edu.
- R. Shehab** Professor and director of the School of Industrial Engineering (OU).  
☎ 1-405-325-2307, ✉ rlshehab@ou.edu.
- B. Feng** Vice-president of PCI Power Costs Inc.  
☎ 1-405-447-6933, ✉ bfeng@powercosts.com.

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## Languages

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

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## Computer Skills and Competences

### Operating Systems

- Experienced in Microsoft operating systems (7, Vista, XP, Server 2008). Competent with historical operating systems such as DOS 1.x-6.x and Windows 98/NT/Server 2003.
- Experienced in UNIX-like operating systems such as Ubuntu, Fedora, and openSUSE.

### Programming Languages

- Competent with FORTRAN 77/90/95, C/C++, Visual Basic 6.0.
- Notions of Java, Haskell, Bash shell, Windows batch files, PHP, MySQL, CSS, XML, HTML.

### Software

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

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## Additional Information

- Won a best paper award in the Theoretical Development category for the Artificial Neural Network In Engineering 2010 (ANNIE 2010) conference.
- Holds a French Private Pilot Certificate (1998) with single and multi-engine land ratings.
- Website administrator for the Laboratory of Optimization and Intelligent Systems, and the School of Industrial Engineering of the University of Oklahoma.

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## Selected Publications

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.

R. C. Gilbert, T. B. Trafalis, M. B. Richman, and L. M. Leslie. Machine Learning Methods for Data Assimilation. In C. H. Dagli, editor, *Computational Intelligence in Architecturing Complex Engineering Systems*, volume 20 of *Intelligent Engineering Systems Through Artificial Neural Networks*, pages 105–112, New York, NY, USA, November 2010. ASME Press. Award-winning paper in the Theoretical Development category.