

# Optimization Software Products and Services From Pinter Consulting Services & Partners

## Summary

The development and solution of nonlinear decision models is essential in many areas of economics, engineering, and the sciences. Global optimization is aimed at finding the best numerical solution of nonlinear models, in the (possible) presence of multiple local optima. Pinter Consulting Services, Inc. (PCS) specializes in the development of advanced nonlinear – both global and local – optimization methodology, software, and offers related expertise and services. Our software products are based on award-winning research: implementations are available for C/C++/FORTRAN compilers, and for a range of prominent modeling environments, including the leading scientific-technical computing systems. Our software products are used worldwide at hundreds of academic, business, government and research organizations. We also offer consulting services, intensive courses and workshops, and we participate in custom application development projects. Please visit [www.pinterconsulting.com](http://www.pinterconsulting.com), and contact us for details.

## Software Implementations (listed in order of release)

- ❖ **LGO Solver Suite** – our core product, recommended for applications as the nonlinear optimization solver component of stand-alone decision support software. LGO is distributed by PCS; it can be used with all C/C++ and FORTRAN compilers. Distributed by PCS.
- ❖ **LGO Integrated Development Environment** – the LGO Solver Suite embedded into an Microsoft Windows GUI. Distributed by PCS.
- ❖ **GAMS/LGO** – developed in cooperation with the GAMS Development Corporation. Available at [www.gams.com](http://www.gams.com).
- ❖ **MathOptimizer** – a native *Mathematica* solver developed in cooperation with Frank Kampas, PhD. Distributed by PCS and by Wolfram Research [www.wolfram.com](http://www.wolfram.com).
- ❖ **MathOptimizer Professional** – *Mathematica*/LGO implementation developed in cooperation with Frank Kampas, PhD. Distributed by PCS and Wolfram Research.
- ❖ **TOMLAB/LGO** – developed in cooperation with TOMLAB Optimization for MATLAB. Available at [www.tomopt.com](http://www.tomopt.com)
- ❖ **MPL/LGO** – developed in cooperation with Maximal Software. Available at [www.maximal-usa.com](http://www.maximal-usa.com).
- ❖ **AIMMS/LGO** – developed in cooperation with Paragon Decision Technology. Available at [www.aimms.com](http://www.aimms.com).
- ❖ **AMPL/LGO** – developed in cooperation with AMPL LLC [www.ampl.com](http://www.ampl.com). Distributed by PCS.
- ❖ **Excel/LGO** – a direct LGO solver link to Excel, developed in cooperation with Frank Kampas, PhD and Baris C. Sal, MSc. Distributed by PCS.
- ❖ **MATLAB/LGO** – a direct LGO solver link to MATLAB, developed in cooperation with Frank Kampas, PhD and Baris C. Sal, MSc. Distributed by PCS.
- ❖ **Maple/LGO** direct solver link implementation. Distributed by PCS.

All listed software products are directly available for personal computers running under MS Windows operating systems. Most of the listed products are also implemented – or can be made available – across all major hardware and operating system platforms.

Please see next page

Our software products are accompanied by technical documentation and ready-to-use model examples. All products are supported by PCS, in cooperation with our developer partners as applicable (see the list above).

Individual, group, campus and site licenses are available for all listed products. Educational and non-profit research discounts are also offered. Modeling/solver capacity limited free demo software versions are available for education and for non-profit research upon request: please contact us or our distributor partners for details.

Additional algorithm implementations and customized development are in progress. We are always interested to hear suggestions regarding future development directions. Test problems and application examples are welcome; we also offer illustrative solutions to qualifying prospects.

## Application Areas

Nonlinear systems modeling and optimization tools are essential in many areas of applied mathematics, physics, chemistry, biology, environmental, medical and pharmaceutical research, as well as in various engineering, econometrics and finance applications. An extensive collection of illustrative case studies and peer-reviewed publications are available upon request: please see the extensive list of publications at [www.pinterconsulting.com](http://www.pinterconsulting.com) and contact us.

## Further Information

János D. Pintér, PhD, DSc – the principal developer of LGO – has over three decades of experience in the area of nonlinear systems modeling and optimization. Dr. Pintér has been working extensively worldwide, in interdisciplinary team environments. He also has presented lectures and workshops around the world.

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Please visit also the websites of our developer partners for detailed technical information: direct links are available from [www.pinterconsulting.com](http://www.pinterconsulting.com).

## Illustrative References

- Pintér, J.D. (1996) *Global Optimization in Action*. Kluwer Academic Publishers, Dordrecht.
- Pintér, J.D. (2001) *Computational Global Optimization in Nonlinear Systems: An Interactive Tutorial*. Lionheart Publishing, Marietta, GA. Available in both printed and electronic format.
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- Pintér, J.D. (Editor) (2006) *Global Optimization: Selected Case Studies*. Springer Science, New York.
- Pintér, J.D. (2006) *Global Optimization with Maple*. An interactive electronic book distributed by PCS.
- Pintér, J.D. (2009) Software development for global optimization. In: Pardalos and Coleman, Eds. *Global Optimization: Methods and Applications*, pp. 183-204. Fields Institute Communications Volume 55. Published by the American Mathematical Society.

Further topical book projects contracted by international publishers and other publications are in progress. Please visit [www.pinterconsulting.com](http://www.pinterconsulting.com) for details, and contact us at [janos.d.pinter@gmail.com](mailto:janos.d.pinter@gmail.com).