

Optimization Software Products and Services

From Pintér Consulting Services & Partners

Summary

The development and solution of nonlinear decision models is important in many areas of the sciences, engineering, and economics. Global optimization is aimed at finding the best possible solution of nonlinear models, in the presence of multiple local optima. Pintér Consulting Services, Inc. (PCS) specializes in the development of nonlinear – global and local – optimization methodology, algorithms and software. Our software products are based on award-winning research: they can effectively assist engineers and scientists to develop and solve their advanced optimization models. Product implementations are available for compilers, optimization modeling languages, and integrated scientific-technical computing systems. These software products are used worldwide: an illustrative client list (that currently includes hundreds of industrial, government, research and academic organizations) is available upon request. We also offer consulting services, intensive courses and workshops, and participate in custom application development projects.

Software Implementations

Listed in order of release; all inquiries can be directed to us and/or to our partners

- ❖ **LGO Solver Suite** – Our core product, recommended as the optimization component of stand-alone (custom) decision support software. For use with a broad range of C/C++/C#/Fortran compilers. See www.pinterconsulting.com, and contact PCS.
- ❖ **LGO Integrated Development Environment** – LGO enhanced with an MS Windows GUI. See www.pinterconsulting.com, and contact PCS.
- ❖ **GAMS/LGO** – Developed in cooperation with the GAMS Development Corporation; available at www.gams.com.
- ❖ **MathOptimizer** – A native *Mathematica* solver; distributed by PCS and by Wolfram Research (www.wolfram.com).
- ❖ **MathOptimizer Professional** – *Mathematica*/LGO implementation developed in cooperation with Dr. Frank J. Kampas; distributed by PCS and Wolfram Research.
- ❖ **TOMLAB/LGO** – Developed in cooperation with TOMLAB Optimization for MATLAB in conjunction with the TOMLAB platform; available at www.tomopt.com.
- ❖ **Global Optimization Toolbox for Maple** – Maple/LGO implementation developed in cooperation with Maplesoft; available at www.maplesoft.com.
- ❖ **MPL/LGO** – Developed in cooperation with Maximal Software; available from www.maximal-usa.com.
- ❖ **AIMMS/LGO** – Developed in cooperation with Paragon Decision Technology; available at www.aimms.com.
- ❖ **AMPL/LGO** – Developed in cooperation with AMPL LLC (www.ampl.com); available from PCS.
- ❖ **Excel/LGO** direct link – Available from PCS.
- ❖ **MATLAB/LGO** direct link – Available from PCS.

All listed products can be used on personal computers running under MS Windows operating systems. LGO and its listed versions are also implemented – or can be made available – across all major hardware and operating system platforms. The software products are accompanied by technical documentation that includes ready-to-use

examples. All products are fully supported in cooperation with our developer partners (as applicable).

Professional (individual, group, and site) licenses are available for all listed products. Non-profit research licenses are also offered at a discount. Size limited free demo software versions (core LGO and several platform implementations) are available for educational purposes upon request. Please contact us for details.

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

Application Areas

Nonlinear systems modeling and optimization are needed in numerous areas of applied mathematics, physics, chemistry, biology, environmental, medical and pharmaceutical research, engineering, econometrics and finances. An extensive collection of illustrative case studies and peer-reviewed publications are available upon request. Please see also the list of publications at www.pinterconsulting.com.

Further Information and Contact

János D. Pintér – the principal developer of LGO and the owner of PCS – has over three decades of experience in the area of systems modeling and optimization. Dr. Pintér has been working extensively in interdisciplinary team environments. Currently, he is a professor at Özyeğin University (Istanbul), and CTO of the Optimal Management Consulting Group www.optimalmcg.com

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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.

Illustrative References

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- Pintér, J.D. (2005) Nonlinear Optimization in Modeling Environments: Software Implementations for Compilers, Spreadsheets, Modeling Languages, and Integrated Computing Systems. In: V. Jeyakumar and A.M. Rubinov, Eds., *Continuous Optimization: Current Trends and Applications*, pp. 147-173. Springer Science, New York.
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