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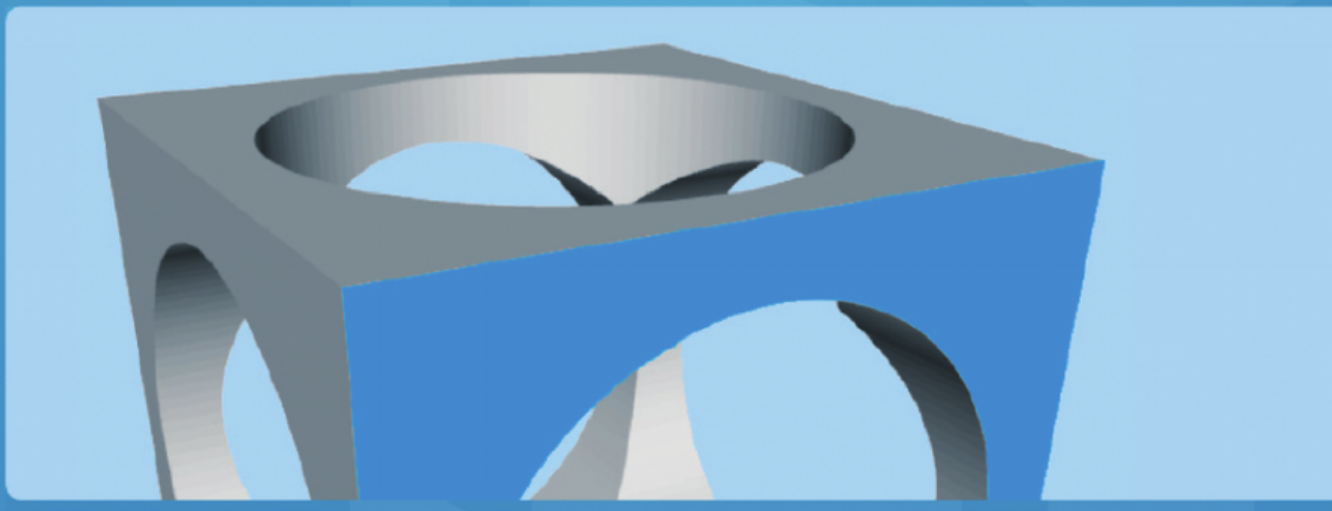
Learning for Industry 4.0

Introduction to 3D Modeling

A Project-Based Approach



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About the Authors

Dr. Pavel Solin is Professor of Applied and Computational Mathematics at the University of Nevada, Reno. He is an expert in scientific computing and the author of six monographs and many research articles in international journals.

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Acknowledgment

We would like to thank many teachers for class-testing the course, and for providing useful feedback that helps us improve the textbook, the self-paced course, and the PLaSM language itself.

Preface

This course introduces the reader to 3D visualization, RGB colors, 2D and 3D shapes, geometrical transformations, and Boolean operations with geometrical objects. Its second and more advanced part introduces reference domains, reference maps, and parametric curves and surfaces.

The course is based on PLaSM (Programming Language of Solid Modeling) – a simple and elegant language based on Python where all objects, transformations, and operations are expressed simple commands. While progressing through the course, the reader also learns how to utilize more advanced elements of computer programming to simplify and automate the creation of 3D designs. The combination of geometry and programming is extremely powerful and rewarding. The PLaSM language is very intuitive and there is no need for prior knowledge of computer programming.

Good luck!

Pavel and Alberto

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Full text is available upon enrollment.