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Peter Simon Sapaty

Symbiosis of Real and Simulated Worlds Under Spatial Grasp Technology

Springer

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To my dear family for their invaluable encouragement and support during the book writing and completion under the current national and global pandemics and its consequences

Preface

The current book reflects a quite different vision of the surrounding world which was influenced in the past by the creation of a citywide distributed heterogeneous computer network from the end of sixties, well before the Internet, with our active participation. For it, computers with different even incompatible hardware and languages had to work together (some using compiled Fortran while others hardware-emulated ANALYTIC directly processing formulas as objects). And there were important numeric-analytic classes of problems which needed cooperative solutions on such hybrid networks. A full redesign of hardware and software and implanting a global language into each computer to work together was absolutely impossible at that time. A method was invented how to manage such hybrid system not from traditional beneath or inside but rather from above, with operational scenarios represented on a symbiotic mixture of different languages which were freely migrating between computers. The needed portion for a particular computer with its unique language was dynamically extracted from the symbiotic scenario, and the results obtained were reintegrated with the rest of the scenario to be processed on other computers, and so on.

And this symbiotic dynamic coverage of a computer network subsequently resulted in a much broader and universal ideology and concept of controlled wavelike (even virus-like) matching of heterogeneous networks by powerful recursive scenarios not only navigating different worlds in parallel but also supplying the covered systems with active command, control, and processing infrastructures which could generate further waves, and so on. And this mode of dealing with distributed worlds from above was also influenced by some activities in art like painting and modern sculptures and also obsession with gestalt psychology considering systems directly as a whole rather than by parts, with the use of spatial images and patterns rather than traditional logic. And all this resulted in the patented Spatial Grasp Technology (SGT) and five previous books, other publications too, with a new international patent being prepared.

Along with describing details of the latest SGT version, we will be showing how to provide deep integration of physical and virtual worlds, also simulation with live control up to their full symbiosis and within the same high-level Spatial Grasp Language (SGL). This may also be considered as a scientific response to the

ongoing hot discussions of what is actually real and what simulated. Some basic network operations will be exhibited in SGL suitable for solving network-related problems in different areas, also simulated examples related to the mysterious notion of consciousness which may be important for advanced intelligent systems. Will also be shown how to model the worldwide spread of viruses and influence of distribution of antivirus vaccine, as a response to the current pandemic disaster, and implementation examples in SGL for the latest decision-centric and mosaic-based concepts for effective organization of modern military and industrial systems.

The presented examples of high-level holistic solutions for these and other tasks from the previous publications are often hundreds of times simpler and shorter than under other approaches, which gives us encouragement for the further research and development in the mentioned areas. We also hope that the developed approach may be useful for the creation of international technological bodies oriented on fighting global crises and disasters, the current pandemics including.

Kiev, Ukraine Peter Simon Sapaty
December 2020

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Active discussions and communications with the following scientific journals of very different orientation, which organized urgent invited publications of the ideas related to the current book, were extremely helpful for its successful writing and final composition.

1. Aeronautics and Aerospace Open Access Journal https://medcraveonline.com/AAOAJ/
2. Journal of Computer Science Research https://ojs.bilpublishing.com/index.php/jcsr/index
3. Acta Scientific Computer Sciences https://www.actascientific.com/ASCS.php
4. Journal of Computer Science and Systems Biology https://www.hilarispublisher.com/computer-science-systems-biology.html
5. SSRG International Journal of Mobile Computing and Application (IJMCA) http://www.internationaljournalssrg.org/IJMCA/index.html
6. International Robotics and Automation Journal https://medcraveonline.com/IRATJ/index
7. Global Journal of Researches in Engineering: J General Engineering https://globaljournals.org/journals/engineering/j-general-engineering
8. Transactions on Engineering and Computer Science https://gnoscience.com/journals/3
9. Advances in Machine Learning and Artificial Intelligence http://opastonline.com/journal/advances-in-machine-learning-artificial-intelligence

The accepted and published abstract at this reputable world symposium: THE SCIENCE OF CONSCIOUSNESS | TSC 2020, inspired inclusion into the book of a chapter devoted to simulation of such mysterious and so far not fully understood notion and problem as consciousness. https://consciousness.arizona.edu/.

Also, the accepted keynote at Global Conference on Biomedical Engineering and Systems, with fighting pandemics as one of its main orientations, inspired inclusion into the book of a special chapter on simulation of the spread of malicious viruses and global world fight with them. https://www.pagesconferences.com/biomedical-engineering/.

Kiev, Ukraine
December 2020

Peter Simon Sapaty

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