There is a software gap between the hardware potential and the performance that can be attained using today’s software parallel program development tools. The tools need manual intervention by the programmer to parallelize the code. Programming a parallel computer requires closely studying the target algorithm or application, more so than in the traditional sequential programming we have all learned. The programmer must be aware of the communication and data dependencies of the algorithm or application. This book provides the techniques to explore the possible ways to program a parallel computer for a given application.

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Fayez Gebali, PhD, has taught at the University of Victoria since 1984 and has served as the Associate Dean of Engineering for undergraduate programs since 2002. He has contributed to dozens of journals and technical reports and has completed four books. Dr. Gebali’s primary research interests include VLSI design, processor array design, algorithms for computer arithmetic, and communication system modeling.