

Master Thesis

Cross-Platform Optimization of Risk Management Applications

Offered jointly by:
risklab GmbH
&
Lehrstuhl für Informatik X

About us

risklab GmbH is the expert and global competence center for strategic investment and risk solutions of Allianz Global Investors AG, which is one of the world's largest active asset managers.

risklab provides its services to renowned national and international institutional investors such as pension funds, corporate clients, family offices, wealth managers and mutual funds.

We create innovative and sustainable investment and risk solutions together with our clients in a true partnership approach.

Background

Risk management is a realm of increasing importance for all types of firms, especially after the still ongoing financial crisis. The underlying mathematical models and optimizations required for doing risk analysis are inherently computationally intensive. Hence, reducing computational time is paramount and opens new horizons of analyses.

Using Monte Carlo simulation techniques for financial computations requires large amounts of computation power. Based on the simulation results, risk and return profiles of investment strategies are derived. Because simulation paths are mutually independent, a significant speedup could be gained through parallelization. The goal is to increase the number of simulated scenarios as they reflect the accuracy of the result. In addition, confidence intervals for the risk figures could be derived by running multiple simulations. The simulations should be performed by taking into account a variety of different investment strategies.

Goal

Investigate the suitability of different parallel architectures for the specified problem.

Advisor

Advisors from risklab GmbH: Dr. Wolfgang Mader, Fayssal El Moufatich
Advisor from TU München: Prof. Dr. Michael Gerndt

Contact

If you have what it takes to join our cutting-edge organization, please send your CV and letter of motivation to students2011@risklab.com. We look forward to hearing from you.

For more information about risklab GmbH please visit www.risklab.com