



Silicon Photonics for Exascale Computing

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Naam van de groep

Course:

Concurrency and Parallel
Programming

1 Disclaimer

Dit is ongeveer het raamwerk voor de dingen die we willen vertellen. Vanwege het gebrek aan tijd hebben we eigenlijk alleen nog maar een heleboel literatuur gelezen, maar er nog vrij weinig over geschreven.

2 Introduction

Supercomputers are getting ever faster. This increasing speed is measured in FLOPS. Traditionally, achieving each increased order of magnitude of FLOPS has been viewed as a milestone - we achieved one teraFLOPS in 1997, one petaFLOPS in 2008. We are currently well on our way to reaching one exaFLOPS, but we've hit a couple of roadblocks. In this paper, we explore the road towards exascale machines, describe the different challenges and the way they can be solved using silicon photonics.

3 Achieving exascale

3.1 Why do we need silicon photonics?

4 What do silicon photonic interconnects consist of

5 Challenges