

Compilers

Chapter 1: Bonus material

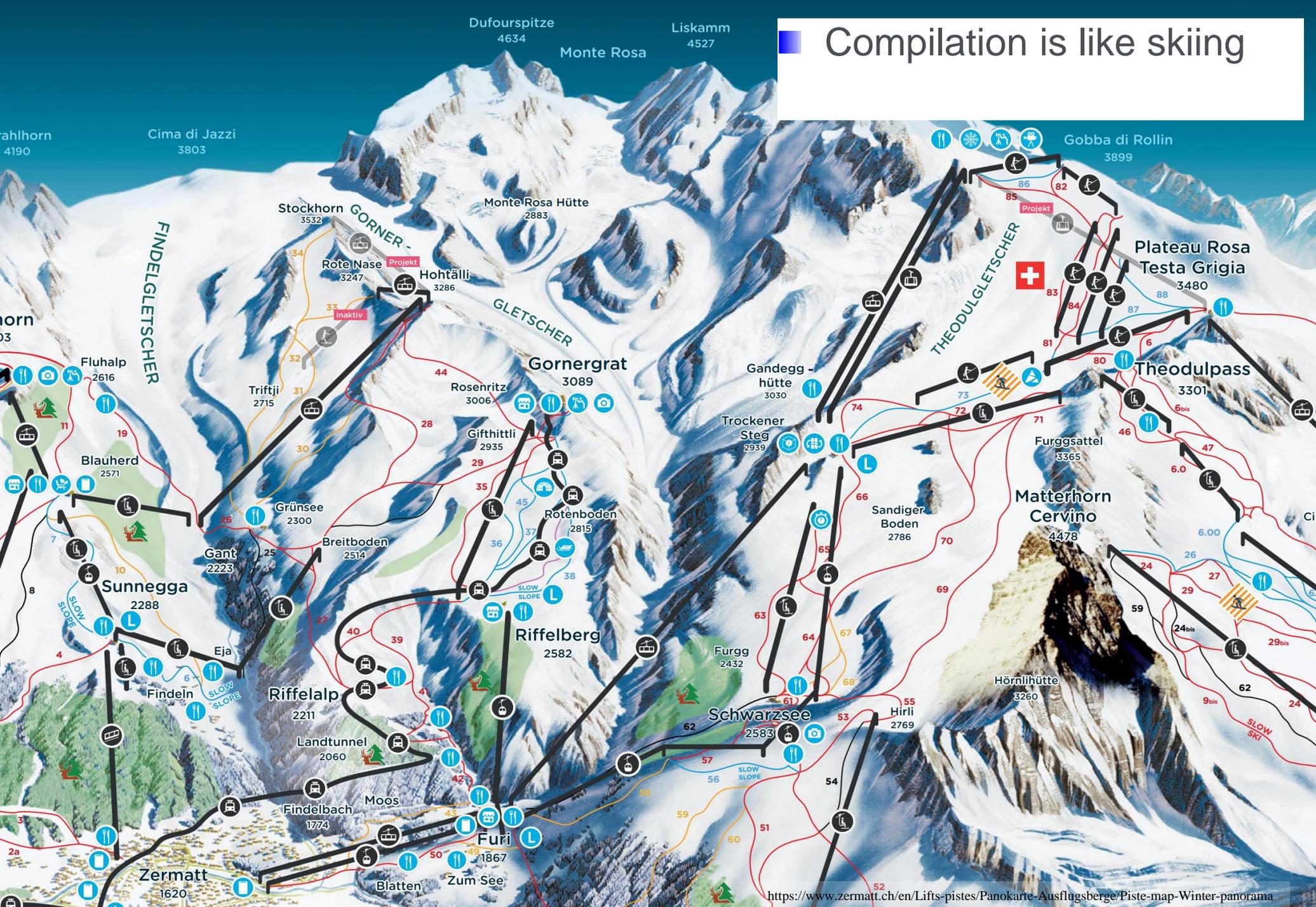
Compiling is like skiing



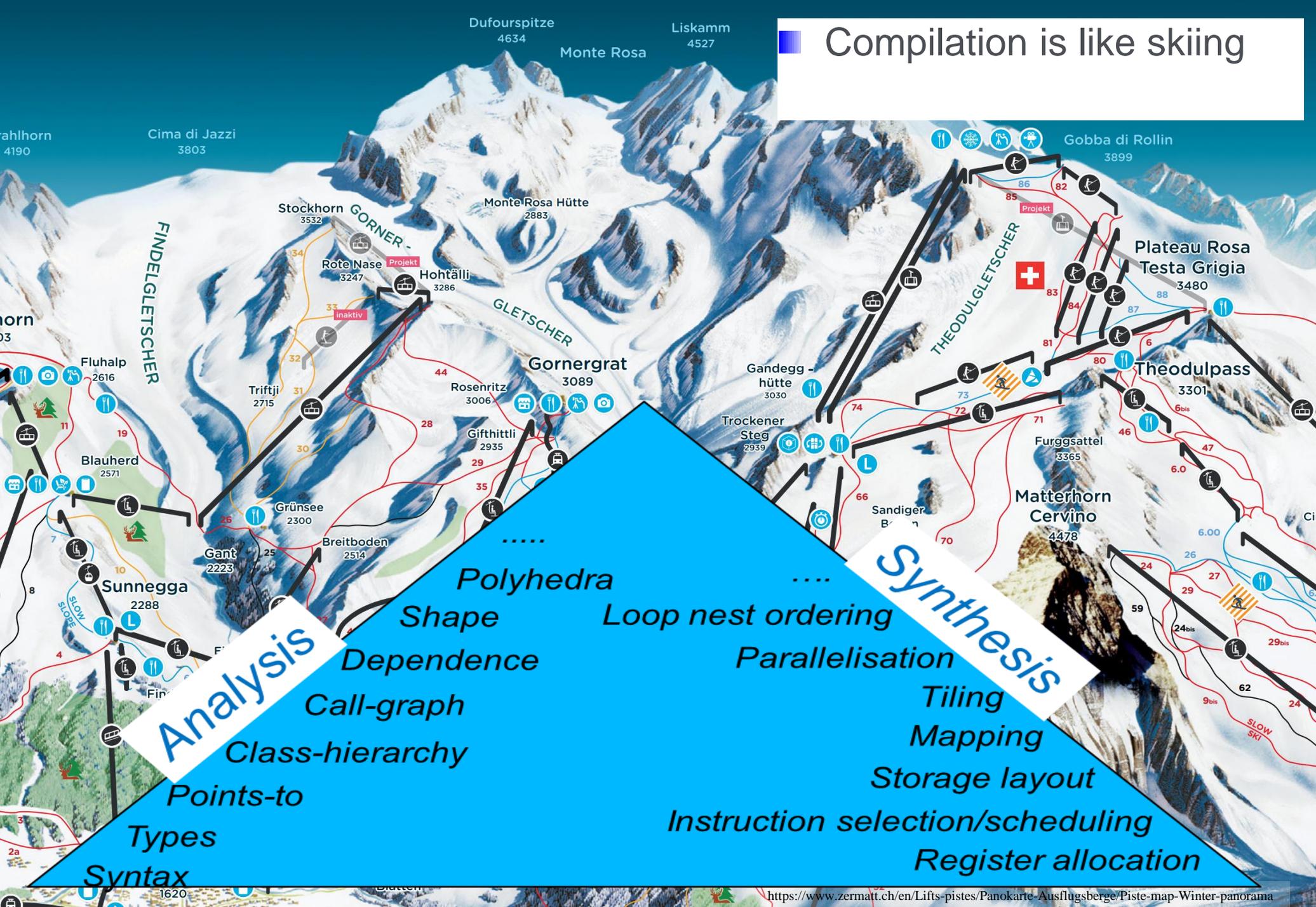
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Non-examinable material for fun/interest

Compilation is like skiing



Compilation is like skiing



Analysis

Synthesis

Syntax

Points-to

Types

Class-hierarchy

Call-graph

Dependence

Shape

Polyhedra

Loop nest ordering

Parallelisation

Tiling

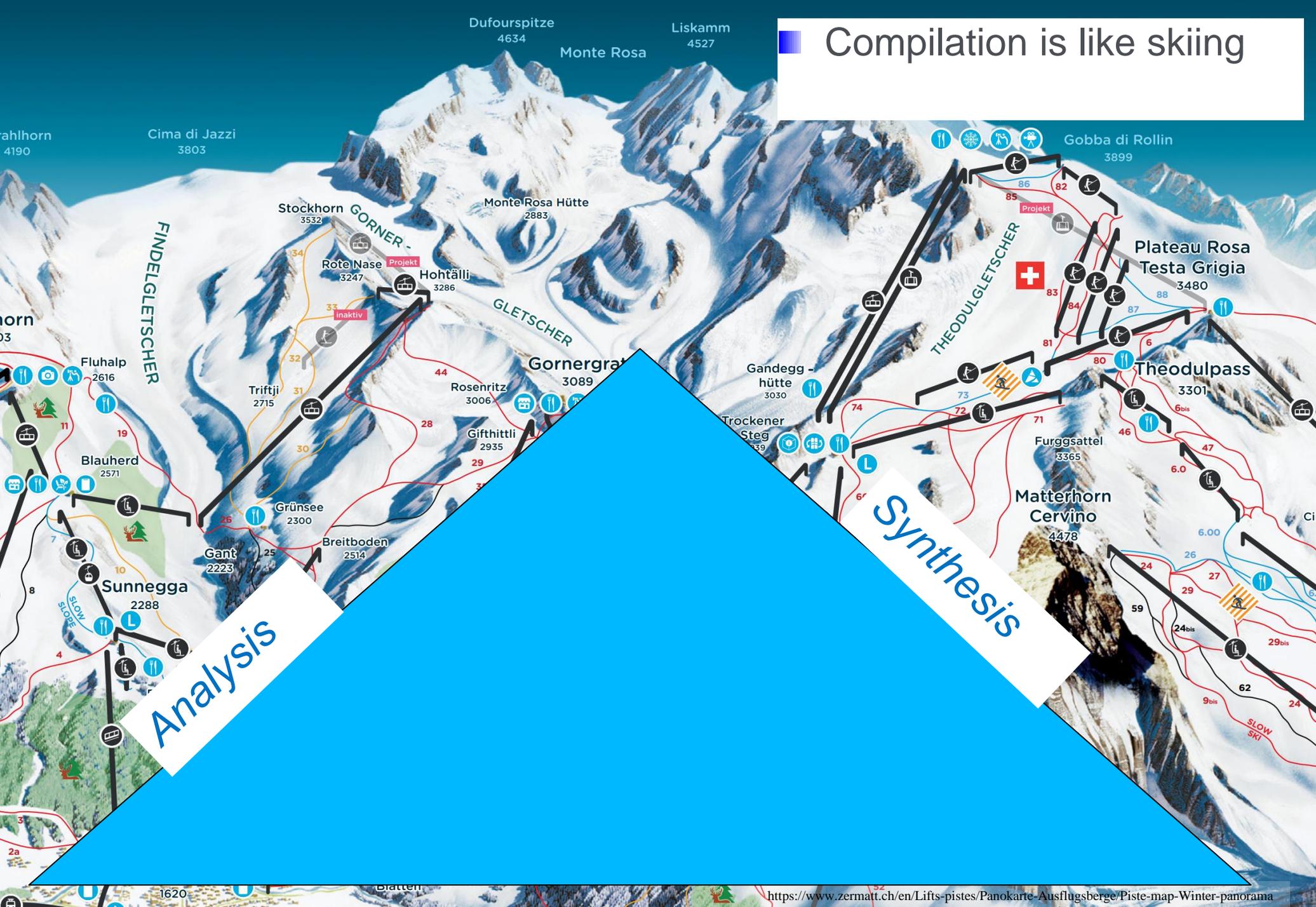
Mapping

Storage layout

Instruction selection/scheduling

Register allocation

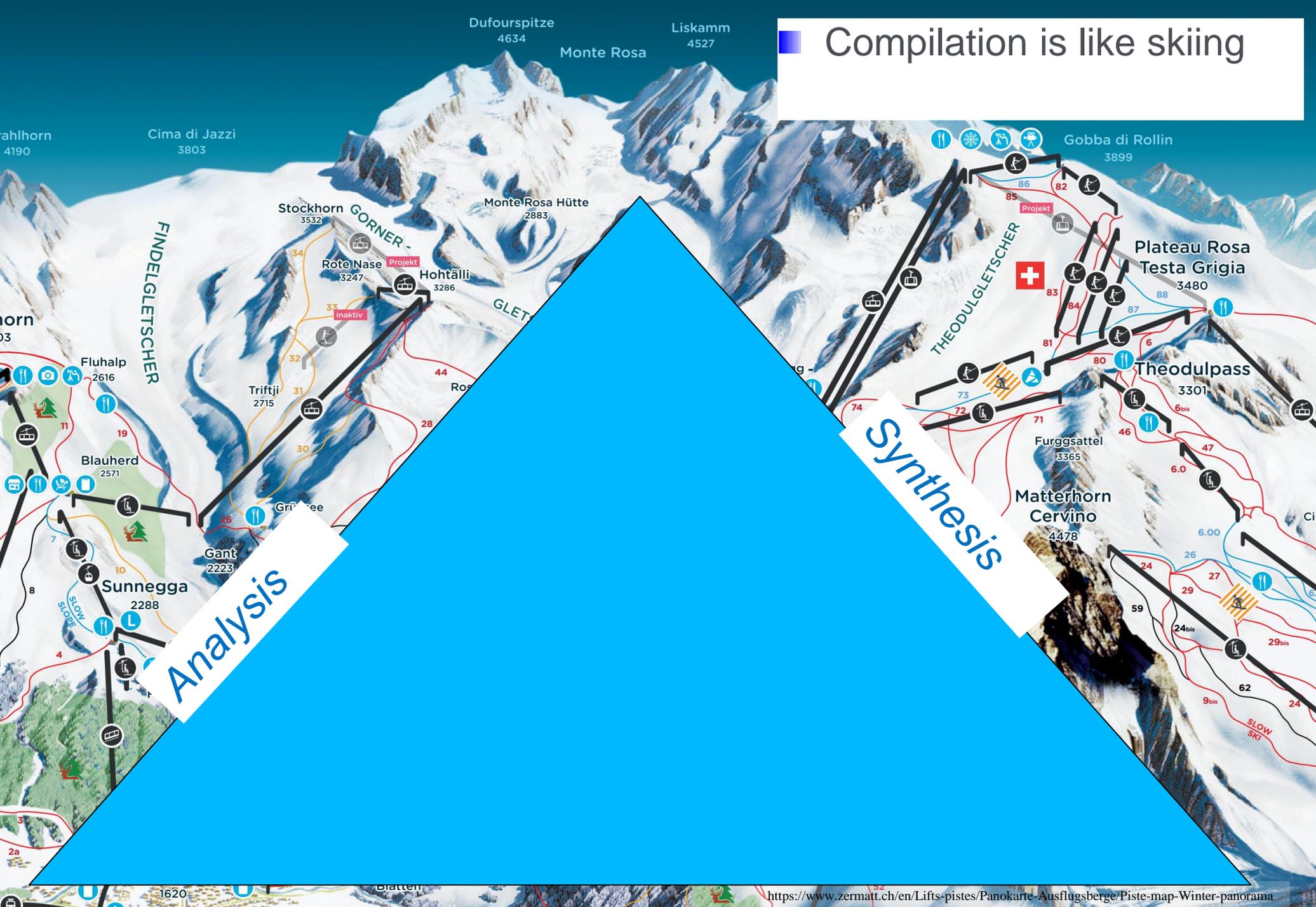
Compilation is like skiing



Analysis

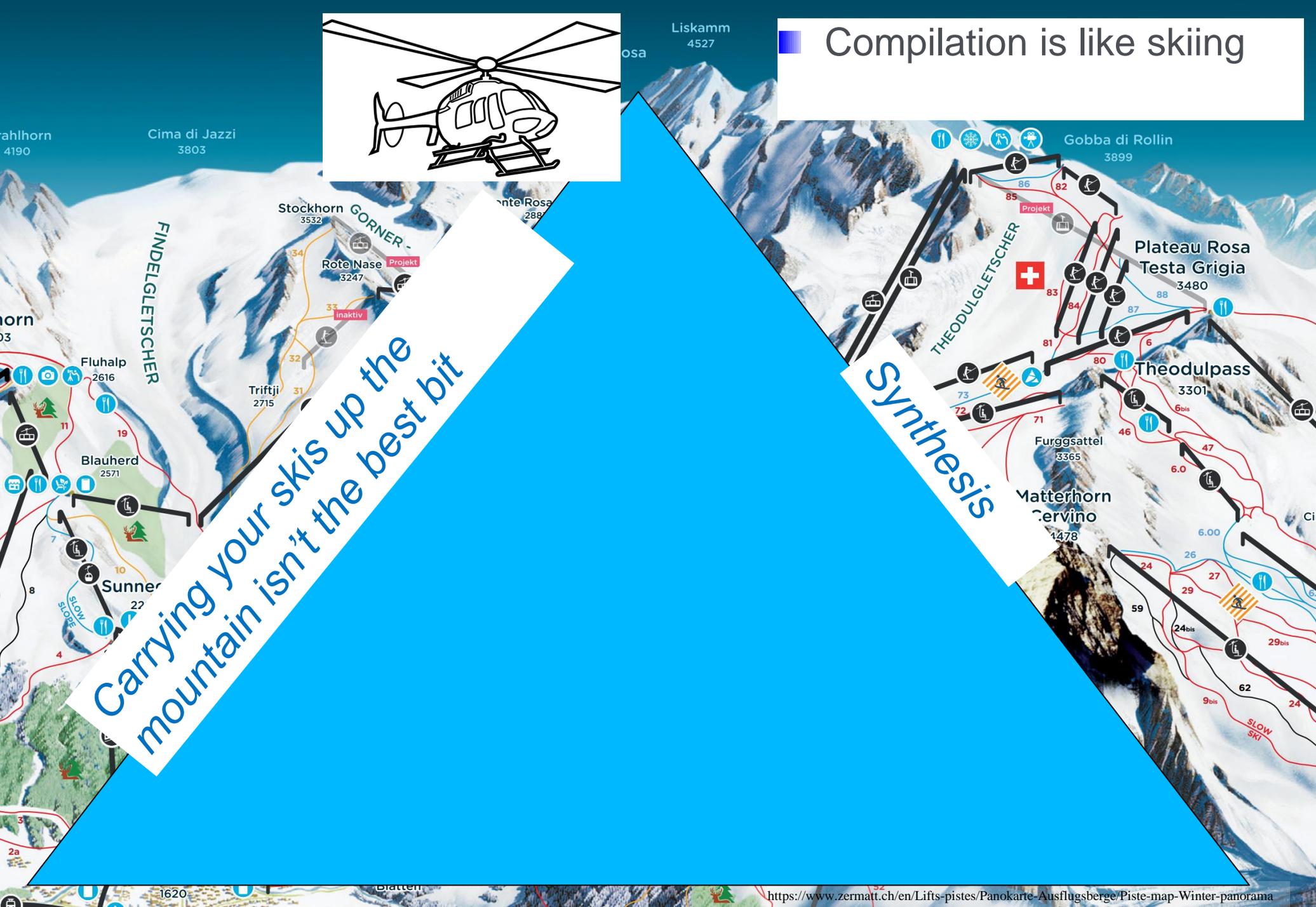
Synthesis

Compilation is like skiing



Analysis

Synthesis



Compilation is like skiing



Carrying your skis up the mountain isn't the best bit

Synthesis

Fluhhorn 4190

Cima di Jazzi 3803

Liskamm 4527

Gobba di Rollin 3899

Stockhorn 3532

Rote Nase 3247

Plateau Rosa Testa Grigia 3480

Fluhalp 2616

Triftji 2715

Theodulpass 3301

Blauherd 2571

Furggsattel 3365

Sunner 22

Matterhorn Cervino 4478

1620

Compilation is like skiing

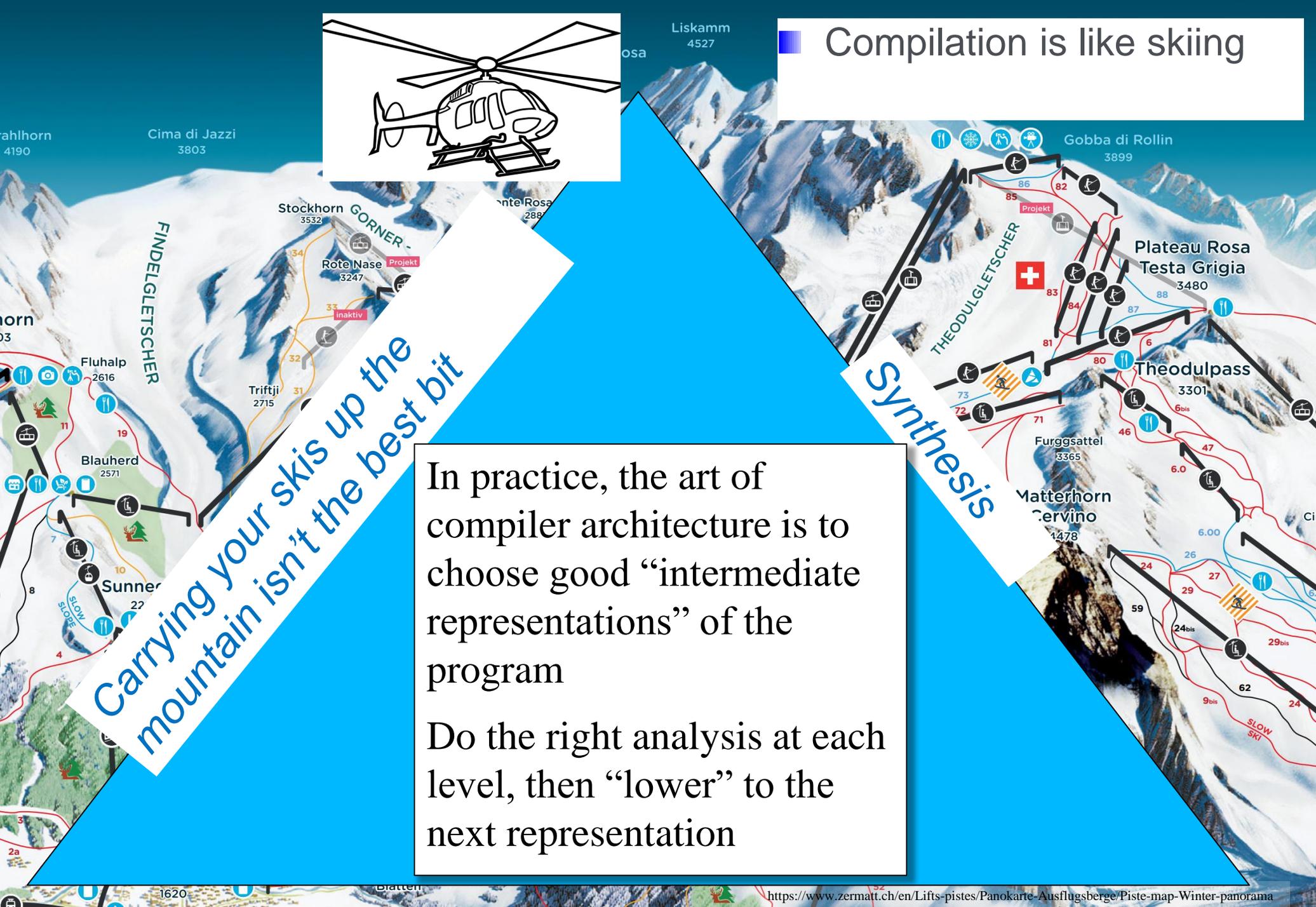


Carrying your skis up the mountain isn't the best bit

In practice, the art of compiler architecture is to choose good “intermediate representations” of the program

Do the right analysis at each level, then “lower” to the next representation

Synthesis



Compilation is like skiing



Carrying your skis up the mountain isn't the best bit

In practice, the art of compiler architecture is to choose good “intermediate representations” of the program

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Synthesis

See my research talks at <http://wp.doc.ic.ac.uk/spo/talks-slides-videos/>

