FIRST AND LAST: MANY, MANY THANKS!

▶ to the organisers
▶ to the speakers
▶ to excellent students through the years
▶ to many excellent co-researchers
TIME LINE

1960: learn to program; fascinated by the world of programs

Ph.D studies (Western Ontario) 62-67: parallel but distinct lines

- Compilers and semantics (Naur’s ALGOL 60 report; wrote an ALGOL 60 compiler)
- Recursive functions, computational complexity, logic

Penn State, University of Kansas

Aarhus: semantics (Mosses, Milner, Plotkin)

DIKU 1980s:

- Brilliant students interested in programming languages
- “I gave them PhD-level projects for their Masters’ theses – and they did it!”
A STIMULUS TO GOOD RESEARCH:
GOOD OPEN PROBLEMS

▶ Give criteria for success in your research (important!)

▶ Aid communicating with other researchers, avoiding research “bubbles”

▶ The key is often to find the right definitions
  (is it “find” or invent” or “discover” ?)

▶ The technical aspects have to work; often challenging
MORE ON OPEN PROBLEMS

I’ve been lucky enough to find three satisfying ones:

► The spectrum problem (at the start of finite model theory)
► The Futamura projections (it took three of us at DIKU one year’s hard work to get them to work right!)
► The types of compilers, interpreters, partial evaluators

About self-application (running programs with programs as data)

► Compilers: bootstrapping, compiling the compiler
► Complexity: diagonalisation, e.g., to prove lower bounds
► Expressivity, e.g., Gödel’s incompleteness theorem

Suprise: many of the same thought patterns recur.
I AM HONORED BY YOUR INTEREST!

- The 6 technical talks here;
- Fitz and Jakob’s talks;
- Work with many research students and colleagues show:
  that you have shared my fascination
  with this remarkable world of
  programs as data objects

You took my wild ideas seriously!