SUMMARY OF
PROGRAMMING LANGUAGES, COMPILER, RUNTIME SYSTEMS BREAK-OUT SESSION
ADDRESS COMMON PROBLEMS WITH COMMON SOLUTIONS

• New exciting application areas
  • mobile, wearable, VR … (edge computing)
  • heterogeneous devices/systems

• Mature research areas
  • common expressions (programming languages)
  • common optimization (compilers)
  • common run-time principles (e.g. scheduling)
PROGRAMMING RESEARCH

- Vibrant and expanding
  - OpenMP, MPI, PGAS, GPU, Swift, Go, RUST … LLVM
- Users and programmers care about
  - parallelism, locality, power, resource management
  - approximation/adaptation/resilience/reliability/location
  - response time/tail latency
PROGRAMMABILITY RESEARCH

- PL/AI symbiosis
- PL, compilers, run-time systems
- AI, deep learning, graph analytics
- Support for profiling/optimization, e.g. OpenMP tool interface (OMPT)
- Resource oblivious programming
- MPI + X, Safe parallelism, Streaming and DSL