Why are we so afraid of bad quality?

Quality of Result (QoR)

Specifying QoR in a meaningful way is hard (granularity? ref point?)

Guaranteeing is hard (cost? missing information?)

Debugging is hard (where is my bug? too approximate?)

Machine learning has the same issues! And we still use it and trust it :). So?

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Approximate != “Probabilistic”

Approximate: relaxing accuracy (det/nondet)

Probabilistic: computing with probabilities

Orthogonal but synergistic!
- Approximate evaluation of probabilistic programs
- Reasoning about uncertainty in approximate programs