Applied Math Software

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on behalf of Dr. Layne Watson

COLLEGE OF ENGINEERING
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Modeling and Analysis for HPC Systems

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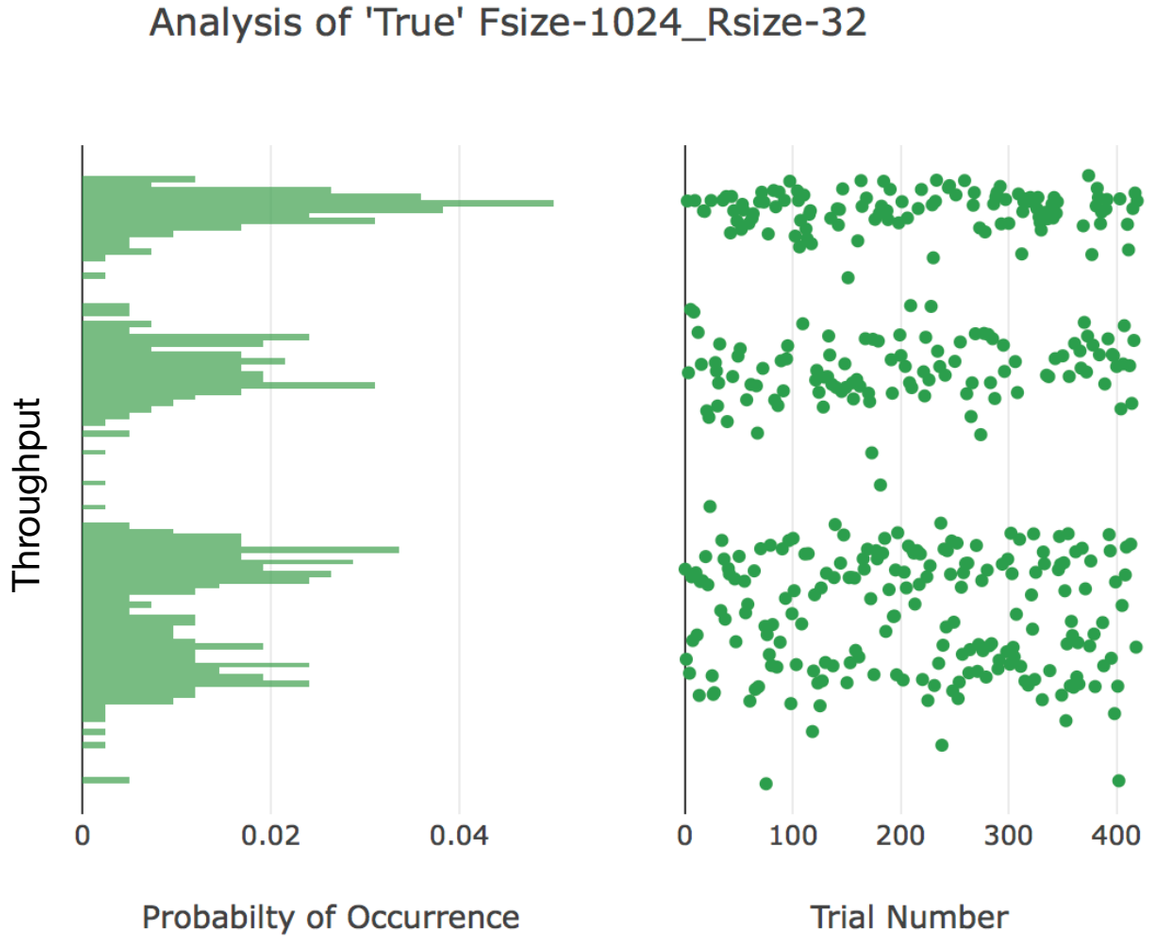

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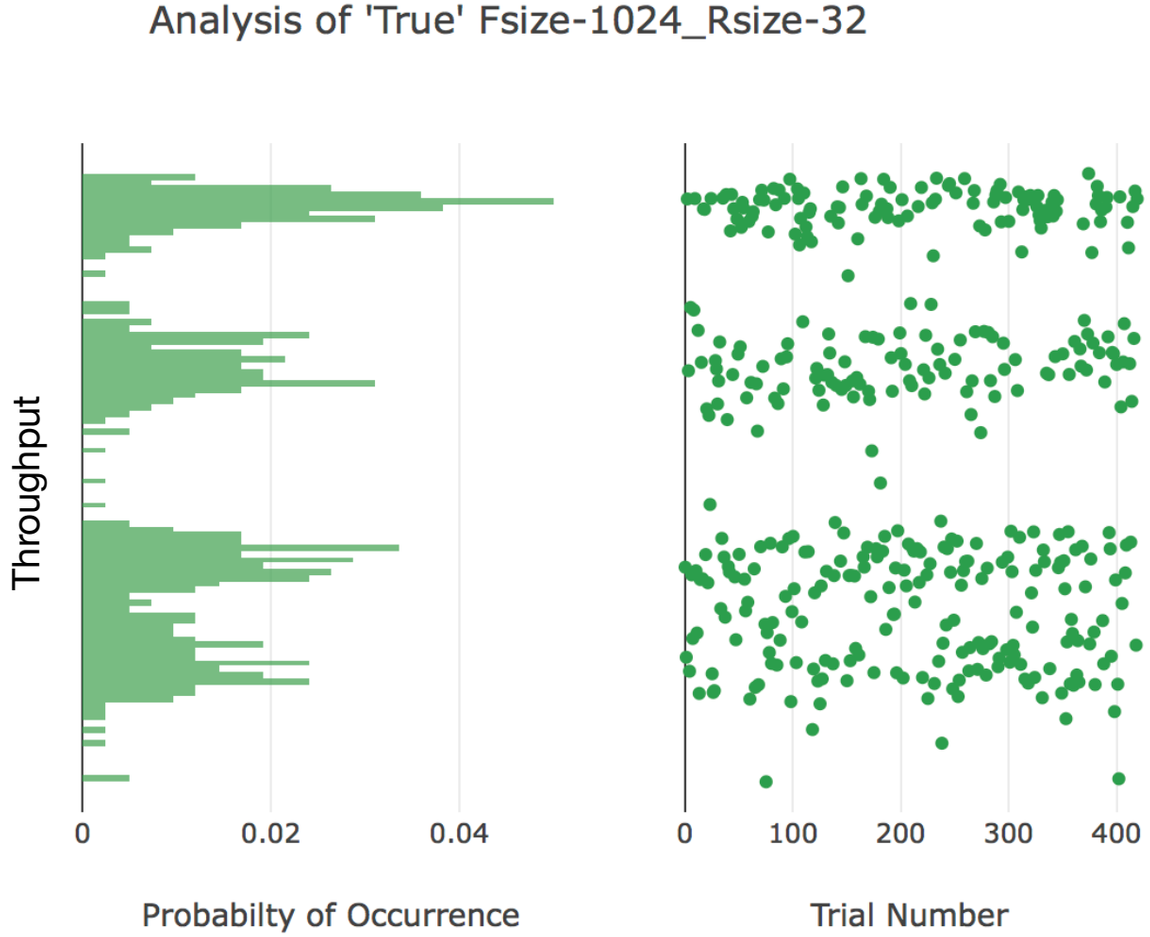

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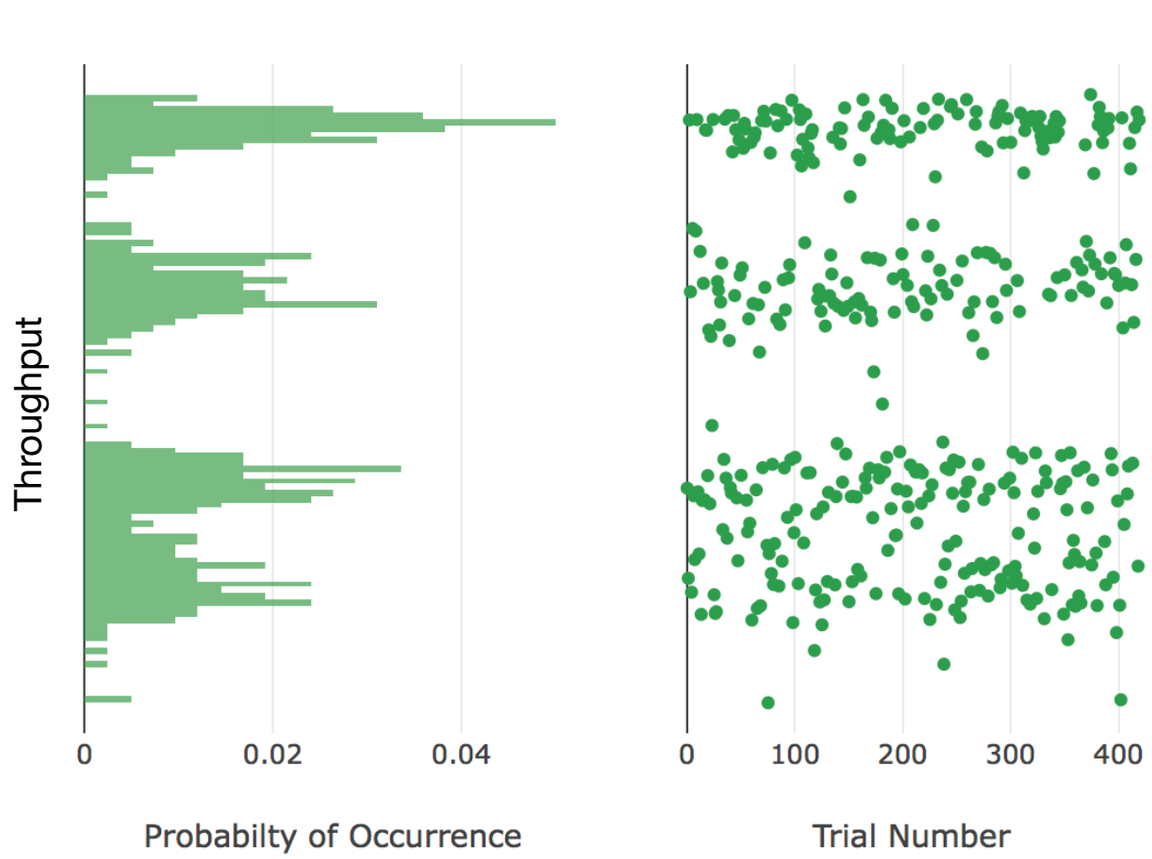

Can we predict how a computer will perform a task based on its configuration?

Can we model and predict this stochastic behavior?

We CAN Model Systems, but…

It’s a hard problem that requires unexpected solutions.

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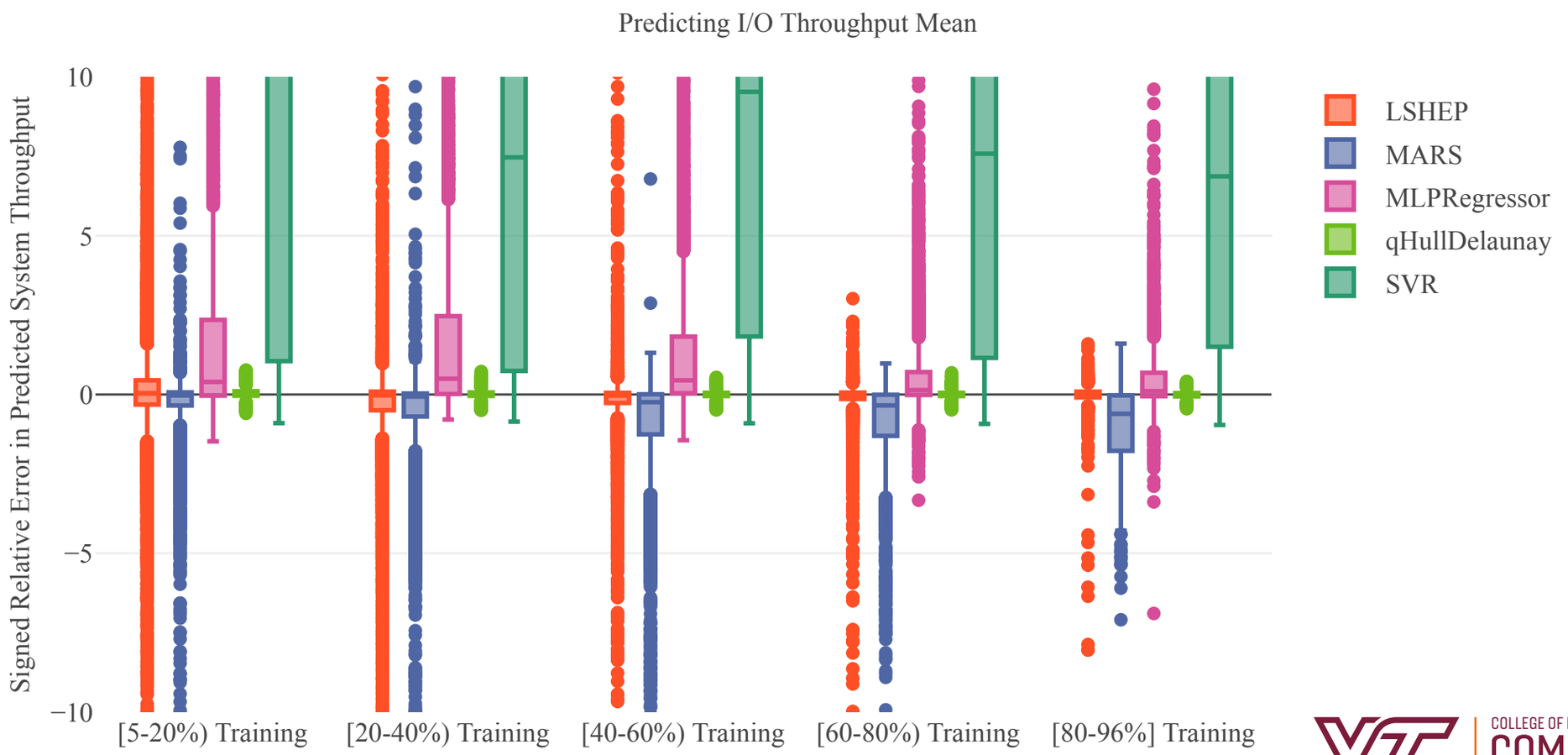

Intro → Math Modeling

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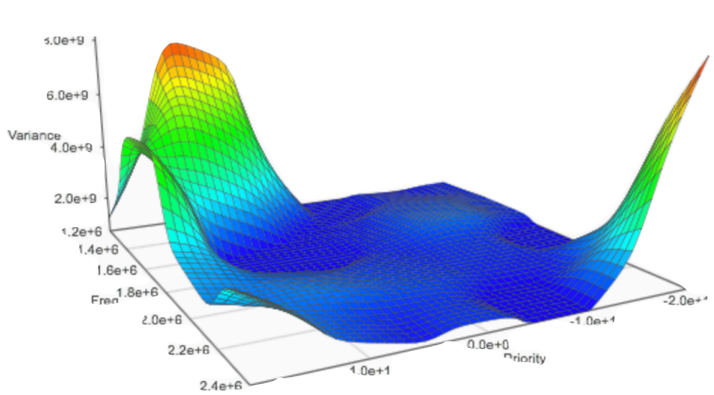
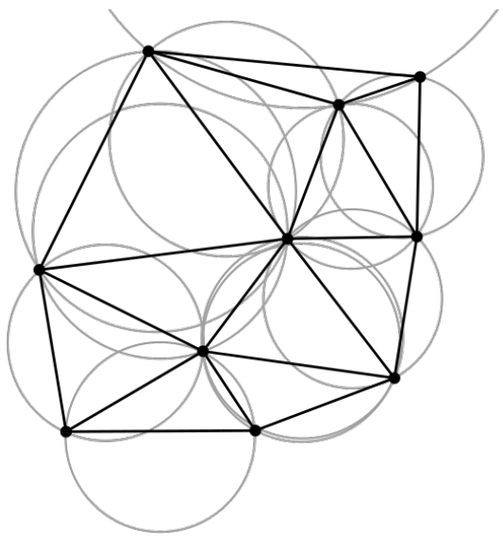
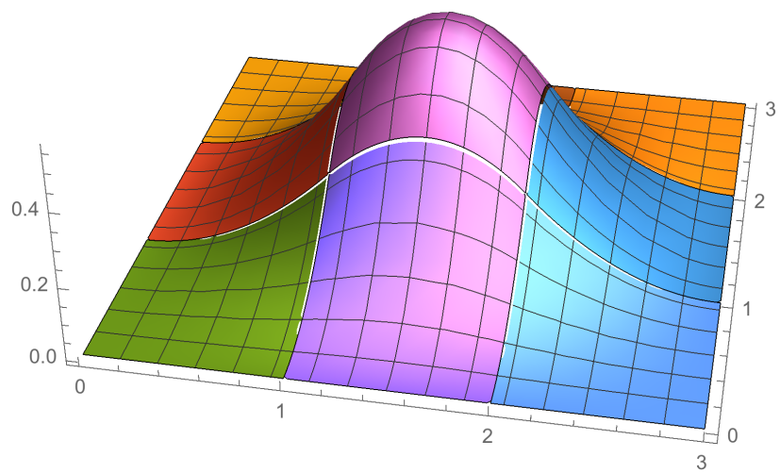






Linear Shepard, *Delaunay Triangulation*, and *Box Splines* are three examples of deterministic interpolants.

Other Projects…

High performance parallel algorithms and math software

Multi-objective black box optimization

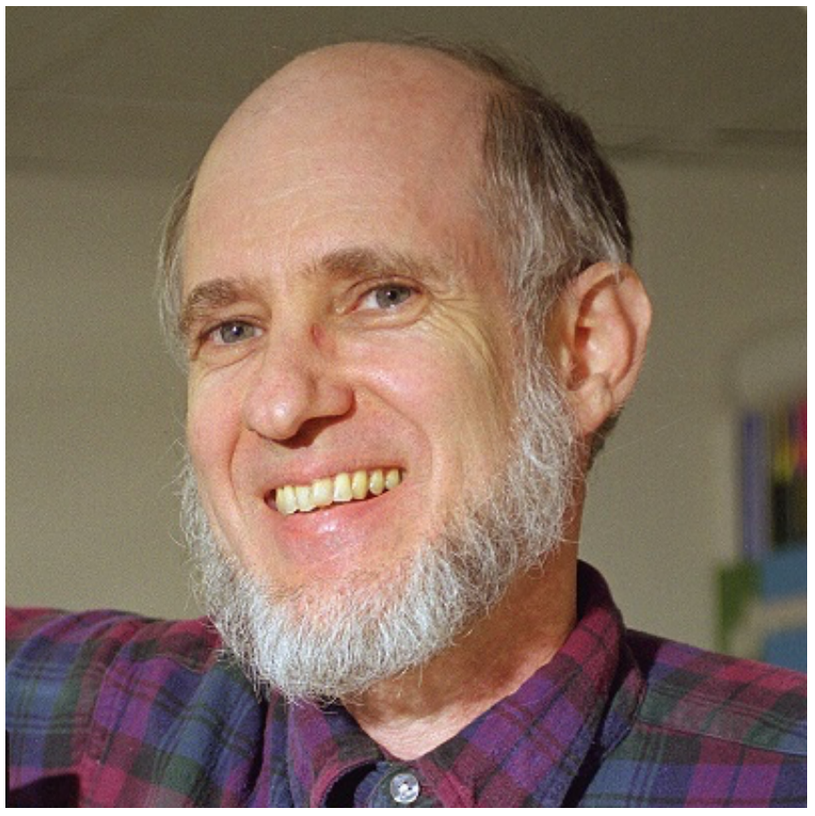
Genetic Algorithms for composite structure design

Fluid mechanics simulation with large ODEs

Circuit simulation via nonlinear systems

Interdisciplinary applications research (very broad topics)

Contact Dr. Watson



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