

CRUNCH Seminars at Brown, Division of Applied Mathematics

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Introduction to SimNet

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SimNet, is an AI accelerated toolkit, inspired by the work of Prof. George Karniadakis and his group. It is intended to be a research and teaching platform, with a focus on solving large industrial problems. Several recent innovations over the original research are shown to be necessary to solve problems that are more practical in nature. Multi-physics problems, parameterized geometries, multi-GPU/multi-Node with XLA support, resolution of gradients in flow around complex geometries and improved implementation of mass balance to insure solution accuracy are some of the features in SimNet. The goal of this webinar is to go over the implementation and sample examples in detail so that it can be leveraged by the researchers for its functionalities. Well documented user guide examples, comparisons with CFD solvers, APIs for customized physics or geometry implementation are provided to fulfill the goals above. We hope that we'll have broad as well as deep engagement with the research group at Brown on AI accelerated computational science and engineering problems that can revolutionize the simulation landscape.