Algorithms, Learning, and Randomness

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We will survey recent and ongoing work at DAE institutions addressing the foundational aspects of learning. These include work on sampling algorithms for high-dimensional distributions, algorithms for optimization in dynamically changing environments, and on fundamental statistical notions such as causal inference and (over-)parameterization and stability of models. An underlying unifying theme in many of these works is the question of understanding and exploiting the properties of randomness in algorithm design & statistics.

Bio: Piyush Srivastava is an Associate Professor in the School of Technology and Computer Science, and an adjunct member of the Department of Theoretical Physics, at TIFR Mumbai. His research is on probabilistic ideas in computer science, often with connections to statistical physics. He was one of the recipients of the Google India Research Awards in 2024. CV: https://www.tifr.res.in/~piyush.srivastava/docs/cv.pdf