Milind Hegde

current: MSRI postdoc. next: postdoc at Columbia. recent past: graduated from UC Berkeley.

Research interests: last passage percolation; Gibbsian line ensembles; limiting KPZ objects like Airy₂ process, KPZ fixed point, directed landscape.



Geometry of last passage percolation

- study and use properties of energy-maximizing paths.
- use limited integrable inputs as hypotheses, so that results hold for any LPP model that can verify them.
- eg. results on upper and lower tail exponents, asymptotics of *k*th point in related point processes, width of *k*-watermelon.

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Brownian Gibbsian line ensembles: eg. parabolic Airy line ensemble

- get probabilistically interesting information about curves via resampling: eg. strong quantitative *process-level* comparisons to Brownian motion of Airy₂ process, finer structure like local time.
- Analyzing KPZ fixed point for general initial data using resampling properties and recent advances connecting the two.

Interested to study models with similar probabilistically accessible structure that may yield results which are unavailable via integrable methods!