

Statement of Purpose

of Abhijit Chowdhary (Applied Mathematics PhD applicant for Fall—2020)

I must admit, coming into college, let alone liking computational mathematics, I didn't even know the field existed. I began as a computer science major, having held hobbies in computers throughout high school, and like all typical incoming freshman, was advised to take linear algebra. At this point, having just learned how to code well, I itched to apply my skills and after being handed a particularly wail-inducing determinant calculation in one of my homeworks, I instead decided to write a script. When I went to office hours to gloat, he pointed to the *Numerical Recipes* text by Press on his shelf; I think that's the moment when I was doomed to love computational math.

In the years since then I've found my interests to lie on the line between computer science and math. Specifically, my research interests are in the numerical approximation of the solutions to PDEs and the theoretical analysis on such methods, as well as the more theoretical dynamical systems and perturbative approach to analysis on nonlinear PDEs. I've also found lots of interest in the area of high performance and parallel scientific computing, having been sucked in during the studies of the former research interests.

Diffusive Stability of the Swift-Hohenberg equation near the Zigzag Boundary:

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