

PROGRAM IN COMPUTING PIC SPOTLIGHT

5-6:30PM, Wednesday, March 11th, 2026

DataX Impact Forum, 3312 Murphy Hall

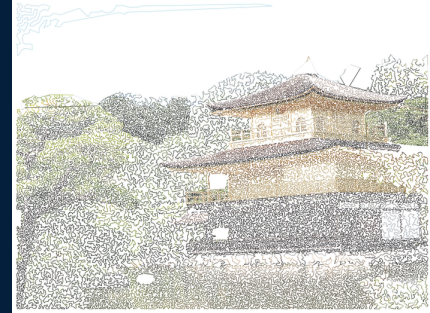
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TRAVELING SALESMAN PROBLEM: FROM MATHEMATICS TO ART

Dengyuhan Dai, Applied Mathematics

The Traveling Salesman Problem (TSP) is a classical optimization problem that seeks the shortest possible route visiting a set of points exactly once. Beyond logistics and routing applications, TSP solutions can also produce continuous geometric trajectories that have artistic value. In this talk, I will explain the basic process for TSP art generating and introduce some new methods with novelty. Starting from an input image, preprocessing are first conducted and then converted the sample into point distributions whose densities reflect visual features such as edges and intensity. At last, TSP solver is used to get the final result. In this procedure, I have combined SAM-3 model and some other modern techniques to improve the overall efficiency and quality of the program.



USING AI TO BETTER UNDERSTAND ONLINE TERMS OF SERVICE AGREEMENTS

Nishanth Tharakan, Applied Mathematics

With the trend towards a surveillance-oriented internet, I have been noticing an increasing amount of changing TOSs for sites and apps I or my friends use regularly, like X, Tiktok, Slack, Meta, etc. At the same time, I had been about "vibe coding" and was perplexed by how people attempted to code entire websites with AI.

In my talk, I'll go over how I'm using Gemini to parse large TOSs to turn them into consumer-friendly texts. I'll talk about not only the technical side of giving Gemini a website page and expecting formatted text back, but also my experience with website scraping, why I think AI won't replace human coders, and ToS:DR, a site which uses the power of human community to do the same thing.



WHO NEEDS MATH 136? LET'S SOLVE PDES USING PINNS!

Andrew Wee, Applied Mathematics

Whether building coolers that prevent our laptops going bust or heaters that give us our lovely warm showers, engineers often build and solve PDEs to model heat flow. However, traditional tools like analytical and numerical methods often fail to solve many heat PDEs due to their complexity and cost respectively. Therefore, my group at NSDC and I proposed a new method for solving them: Physics Informed Neural Networks (PINNs). By representing the solution to a 2D Heat Equation as a neural network and training it based on how accurately it solves the PDE & various initial/boundary conditions, we estimated solutions to PDEs with considerable success and low cost.

PERFORMING SOCIAL CLOSURE: COLLEGE BOARD GEOMARKETS AND RECRUITING VISITS BY SELECTIVE COLLEGES

Ozan Jaquette, Associate Professor of Higher Education

College Board Geomarkets carve metropolitan areas into smaller geographies meant to define local recruiting markets. Geomarkets are third-party "market devices" embedded in the infrastructure colleges use to plan recruiting. This paper analyzes the relationship between Geomarkets and high school recruiting visits made by a sample of 42 selective colleges.



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