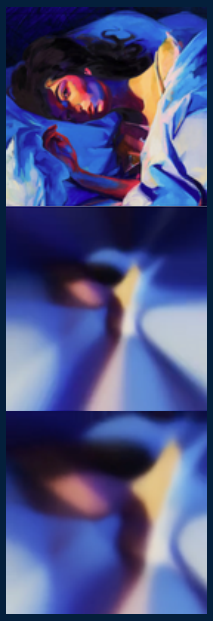
PROGRAM IN COMPUTING

PIC SPOTLIGHT

5-6:30PM, Wednesday, January 21st, 2026

DataX Impact Forum, 3312 Murphy Hall

RSVP bit.ly/49rH1r0



VISUALIZING MUSIC WITH NEURAL NETWORK

Shanmei Wanyan, Statistics and Data Science major, Researcher in the AIVC Laboratory

Introducing students to a music-conditioned neural visualizer that uses Compositional Pattern-Producing Networks (CPPNs) to create animated artwork driven by audio. The system first learns the overall structure and color palette of a reference image, and then generates video frames whose appearance changes smoothly based on features extracted from the soundtrack.

THE GIGABYTE ECONOMY: WHY CODERS ARE TAKING OVER THE FEDERAL RESERVE AND WALL STREET

Nathan Sokolovsky, Applied Mathematics/Physics major

My talk explores how coding has become essential in the world of economic modeling and analysis. I will speak of two personal projects at the intersection of math, economics, and programming. One is concerned with the field of auction theory, which has been aided heavily with recent computational advancements. I'll note impressive examples like the FCC Incentive Auctions which came as a byproduct of research in economics and coding as well as more accessible means of implementing code within trading algorithms and market design. Throughout, I'll emphasize how coding bridges economic theory and real-world data to allow economists to make impactful decisions across the globe.

TURNING MESSY CLASS NOTES INTO SMART STUDY CAPSULES WITH AI

Junhao Jia, Statistics and Data Science major

In this talk I'll share FishCapsule - an AI-powered self-study website I built. The app takes raw syllabi and messy notes and turns them into Cornell-style "learning capsules": cues, structured notes, summaries, misconceptions with corrections, and quick-check questions. I'll talk about how I used Next.js + TypeScript with the GLM-4.5-Flash API to design this system, what worked and what failed in practice, and how this kind of tool can actually help undergrads prepare for exams more efficiently.

COUNTING RHYTHMS USING CLOCK DIVIDERS

Michael Andrews, PIC Director

Modular synthesizers create wonderful sounds, but they can be intimidating at first. In this talk, I will speak about "clock dividers" which can be explained by counting and clapping. I will discuss how rhythms in "Bleed" by Meshuggah can be constructed using clock dividers and I will show them in action using the Moog Subharmonicon (a semi-modular synthesizer). I will discuss how the clock dividers that I coded myself for Electrosmith's Daisy Patch improve on those in the Subharmonicon. I hope for your takeaway from this talk to be that coding can allow you to solve the problems that matter to you the most whether this means designing music gear or something else.

INTERESTED IN GIVING A TALK? Signup here: bit.ly/4sknrWh