

PROGRAM IN COMPUTING

PIC SPOTLIGHT

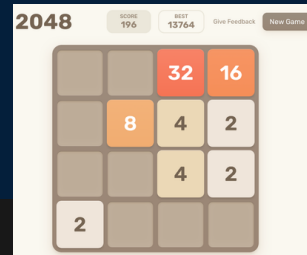
🕒 2:30PM-3:30PM, Thursday, May 14th, 2026

📍 DataX Impact Forum, 3312 Murphy Hall

BOMB 2048

Yuhan Zhou, Applied Mathematics Major

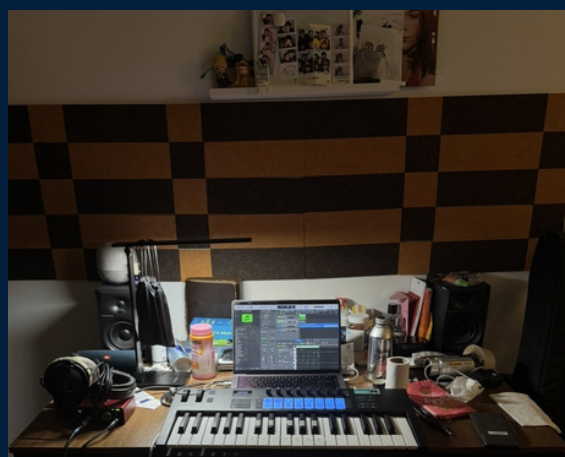
2048 is a classic time-killing game, but I wanted to make it more challenging and engaging. In this talk, I will introduce a variant of 2048 called "8008 2048." In addition to the traditional goal of reaching 2048 on a 4x4 grid, this version of the game includes a hidden bomb beneath the board that records the numbers passing over or remaining on the bomb block. Once the accumulated score exceeds a threshold, the bomb "explodes" and halves the values of neighboring tiles, adding an extra layer of strategy and unpredictability to the game. The entire project was developed in VS Code using only Python concepts introduced in PIC 16A. My hope for this talk is to show that, even in the age of AI, coding by yourself remains a powerful and enjoyable way to explore ideas, solve problems, and become an active creator rather than only a user of technology.



		2		
	4	16		
	2	4	2	16
	4	16	32	4

Bomb at [2,3] | Score: 168/200 | Last Step: +2
input w/a/s/d/w

💣 BOOM! Explosion! Numbers around are halved!
New Bomb is buried at [2, 3]!



PRODUCER TOOLKIT - DON'T LOSE YOUR FLOW STATE

Joe Wang (aka [Seph Hz](#)), Applied Mathematics Major

Sampling another song into a track usually starts with guesswork. What's the BPM (Beats Per Minute)? What key is it in? I find myself bouncing between different sites and apps to figure it out. By the time I have the answers, I'm out of my DAW (Digital Audio Workstation) and out of my creative flow. So I built "Producer Toolkit", a Python desktop app that answers both questions with a single click. I'll walk through how librosa's beat tracking, Krumhansl-Kessler key-profile correlation, and Spotify's Pedalboard library turn signal-processing math into tools that save producers time per session, all wrapped in a PySide6 interface that a non-coder can use.

LOOPING AUDIO & EXTENDING NOTES TO INFINITY

Michael Andrews, PIC Director

Loopers are often used by solo guitarists so that they can repeat a cool idea and play over the top of it. I will discuss a looper that I made for use within my modular synthesizer ecosystem. As well as looping audio in the expected way, it sends tempo information to the rest of my system, allows skipping and repeating beats, and enables on-the-fly edits to the loop.

I will also talk about a similar-sounding but very different device, one that can take an incoming audio signal and play it back forever, allowing one to "extend notes to infinity." This is based on the [Endless Processor](#) by Blukač.

