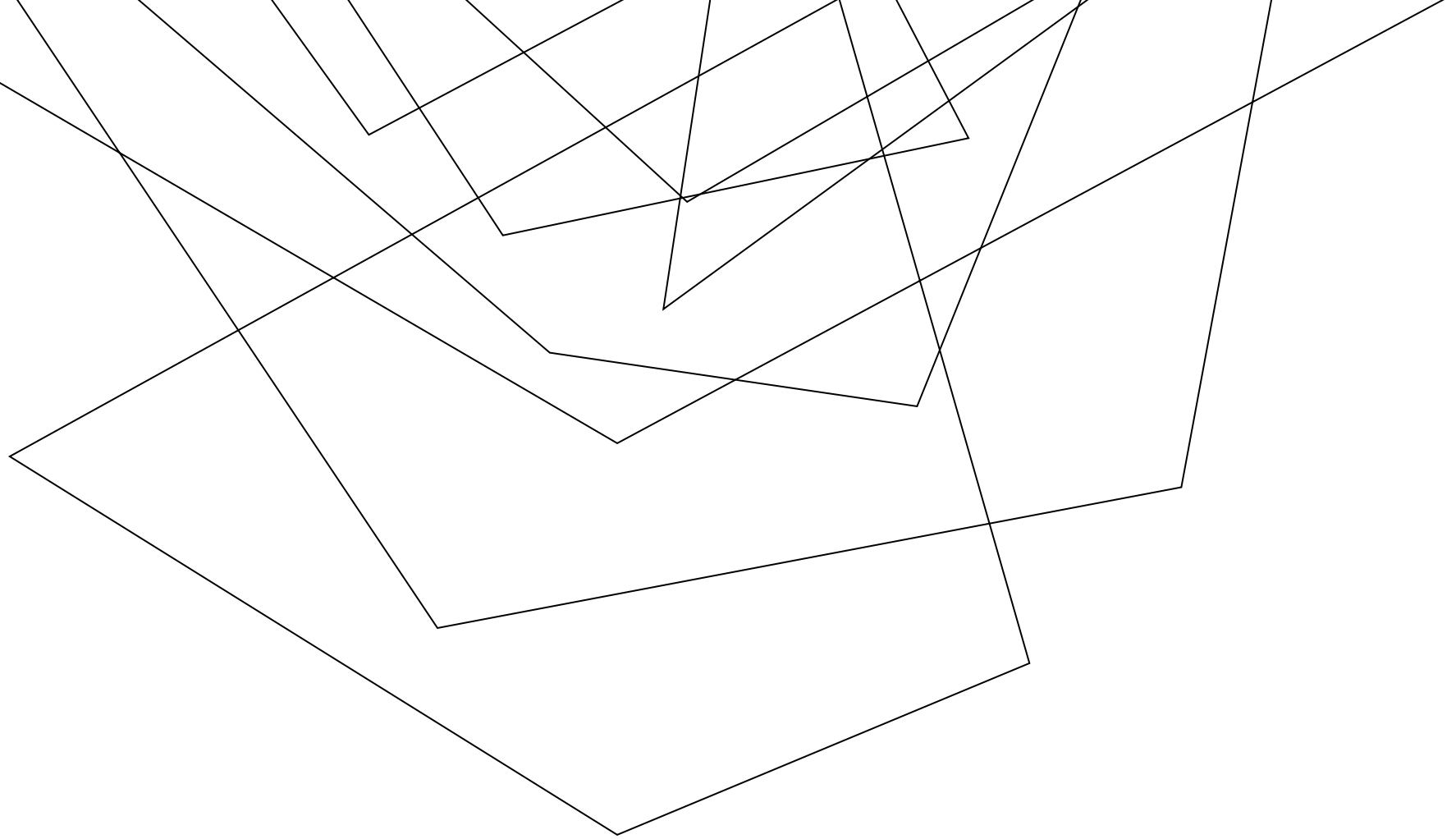
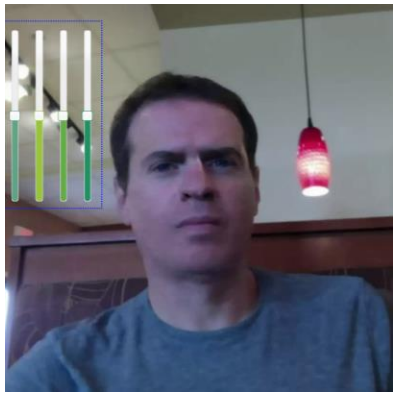
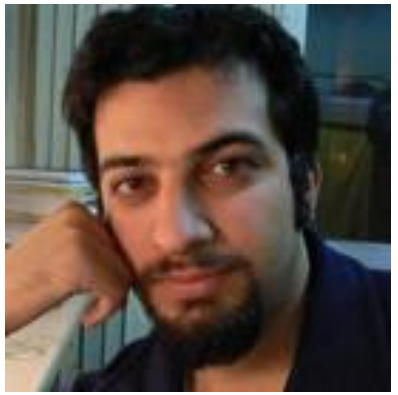


FUTURE SLEUTHS

Jon Lederman and Ali Davody

MEET THE FUTURE SLEUTHS





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FUTURE SLEUTHS APPROACH

Transformer Models

Transformer models are a type of neural network architecture that leverage an idea called attention that is loosely analogous to how humans focus on specific aspects of data to make predictions or classifications. We are looking at combining these models with a method called exponential smoothing to improve the transformer performance.

XGBoost

XGBoost falls under a general class of boosting algorithms that utilize a staged series of weak learners to solve classification or prediction problems. Unlike gradient boosting (which uses gradient decsent), XGBoost searches over a function space using the Newton-Raphson method for finding zeros using a second order Taylor expansion.

Gaussian Processes

A Gaussian process is a Bayesian method that can be applied to regression or classification problems. The assumptions are that the data is multivariate-gaussian. An important hyperparameter is the kernel functionthat defines the autocorrelation between data points.