# psi\_sdk.py

from typing import List

import numpy as np

class PsiModel:

def \_\_init\_\_(self):

self.name = "psi-sdk"

self.version = "1.0.0"

self.description = "Ψ-model: Structural coincidence recognition engine."

def compute\_intersections(self, streams: List[List[float]]) -> List[float]:

n = len(streams)

t\_len = len(streams[0])

result = np.zeros(t\_len)

for i in range(n):

for j in range(i + 1, n):

result += np.minimum(streams[i], streams[j])

return result.tolist()

def compute\_derivative(self, signal: List[float], dt: float = 1.0) -> List[float]:

return np.gradient(signal, dt).tolist()

def compute\_resonance(self, streams: List[List[float]], dt: float = 1.0) -> List[float]:

intersections = self.compute\_intersections(streams)

psi\_t = self.compute\_derivative(intersections, dt)

return psi\_t

def compute\_zeta(self, psi\_t: List[float]) -> float:

return float(np.mean(np.abs(psi\_t)))