SYNAPTIC NEURAL NETWORK

SNN

NEATWARE

AN ARTIFICIAL INTELLIGENCE PLATFORM

FOR LOW POWER AND STATISTICAL SOLUTIONS

ARTIFICIAL INTELLIGENCE VISION
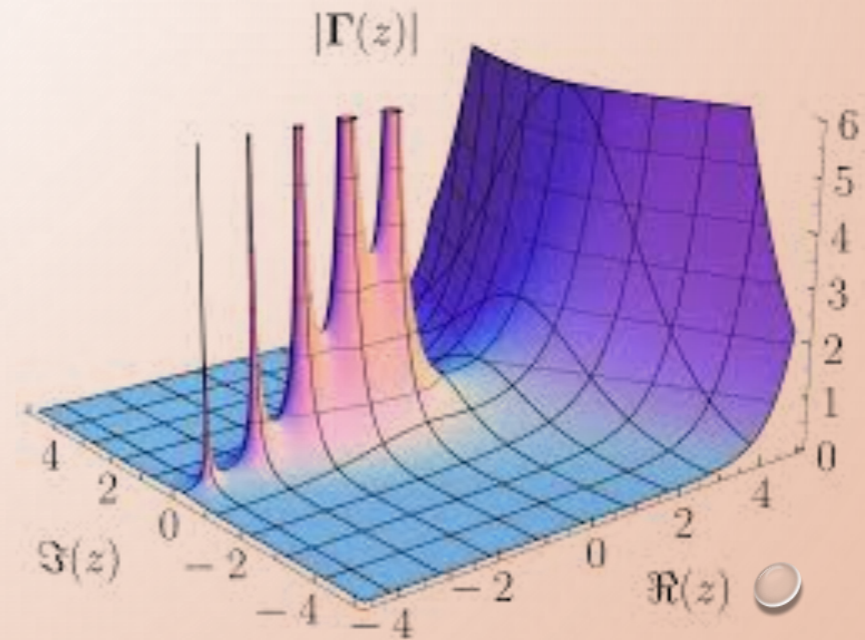
AI IS GENERAL PURPOSE TECH

DATA IS RAW OIL.

DISTRIBUTION IS GAS.

MODEL TRAINING IS REFINER.

MODEL INFERENCE IS ENGINE

DISTRIBUTION & MODELS ARE IPS

PROBLEMS OF CURRENT NEURAL NETWORK

MCCULLOCH-PITTS NEURON MODEL FROM 1943

LINEAR SYNAPSES AND DENDRITES

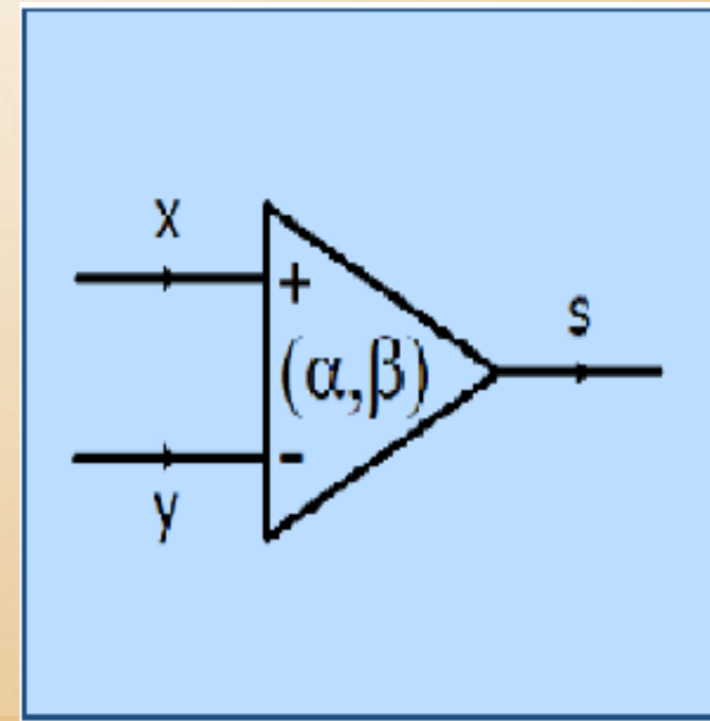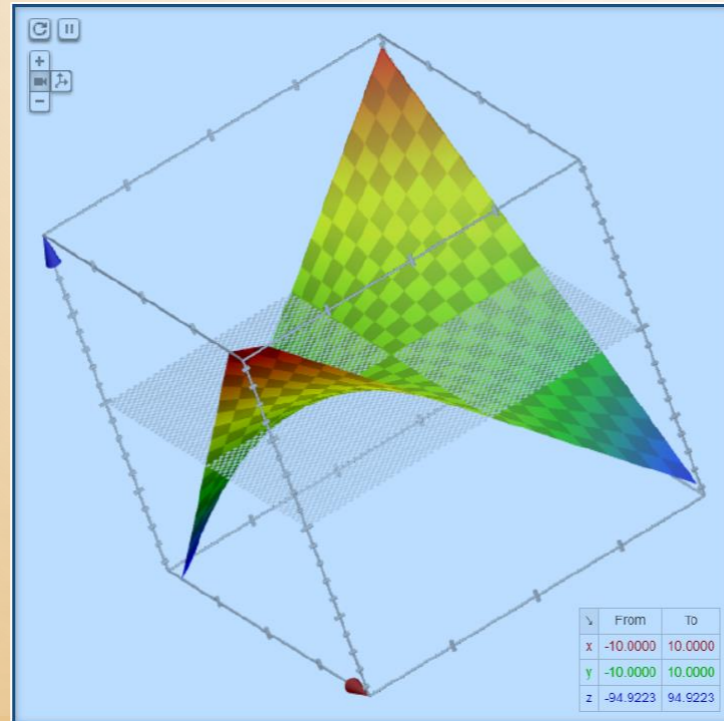BLACKBOX OF NEURAL NETWORK PARAMETERS

BACK-PROPAGATION LEARNING NOT IN BRAIN
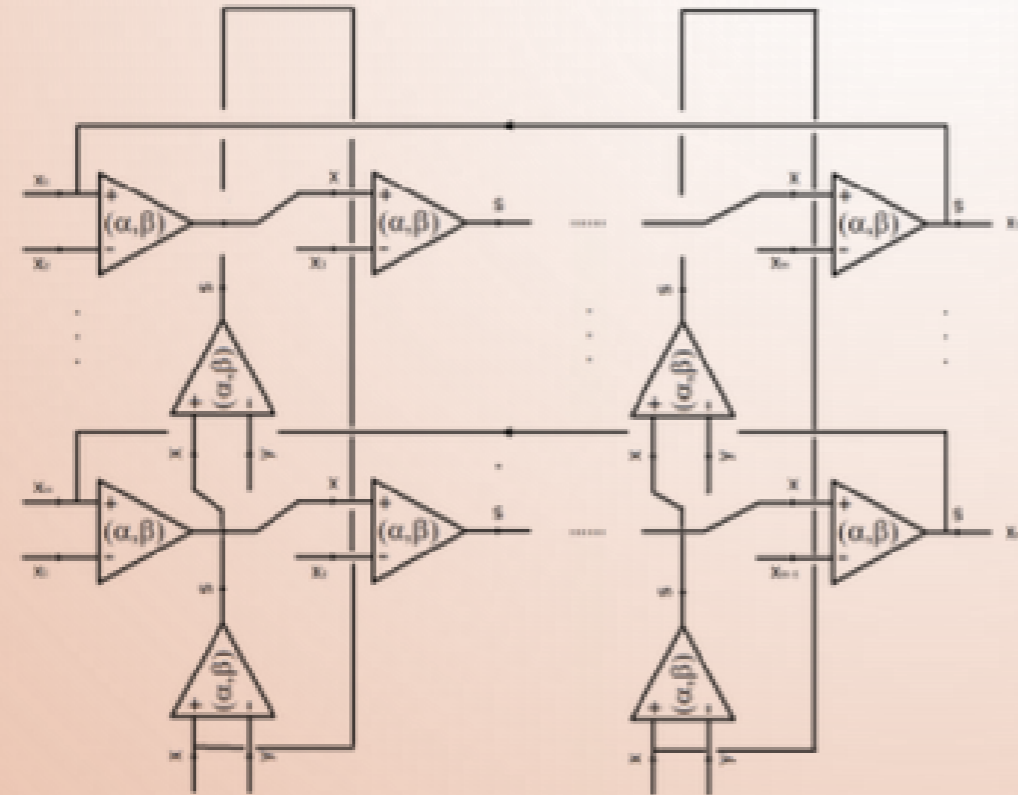
MEANINGLESS DATA IN THE NETWORK

SIMPLE TOPOLOGY OF CONNECTION (LAYERS)

SNN SYNAPSE

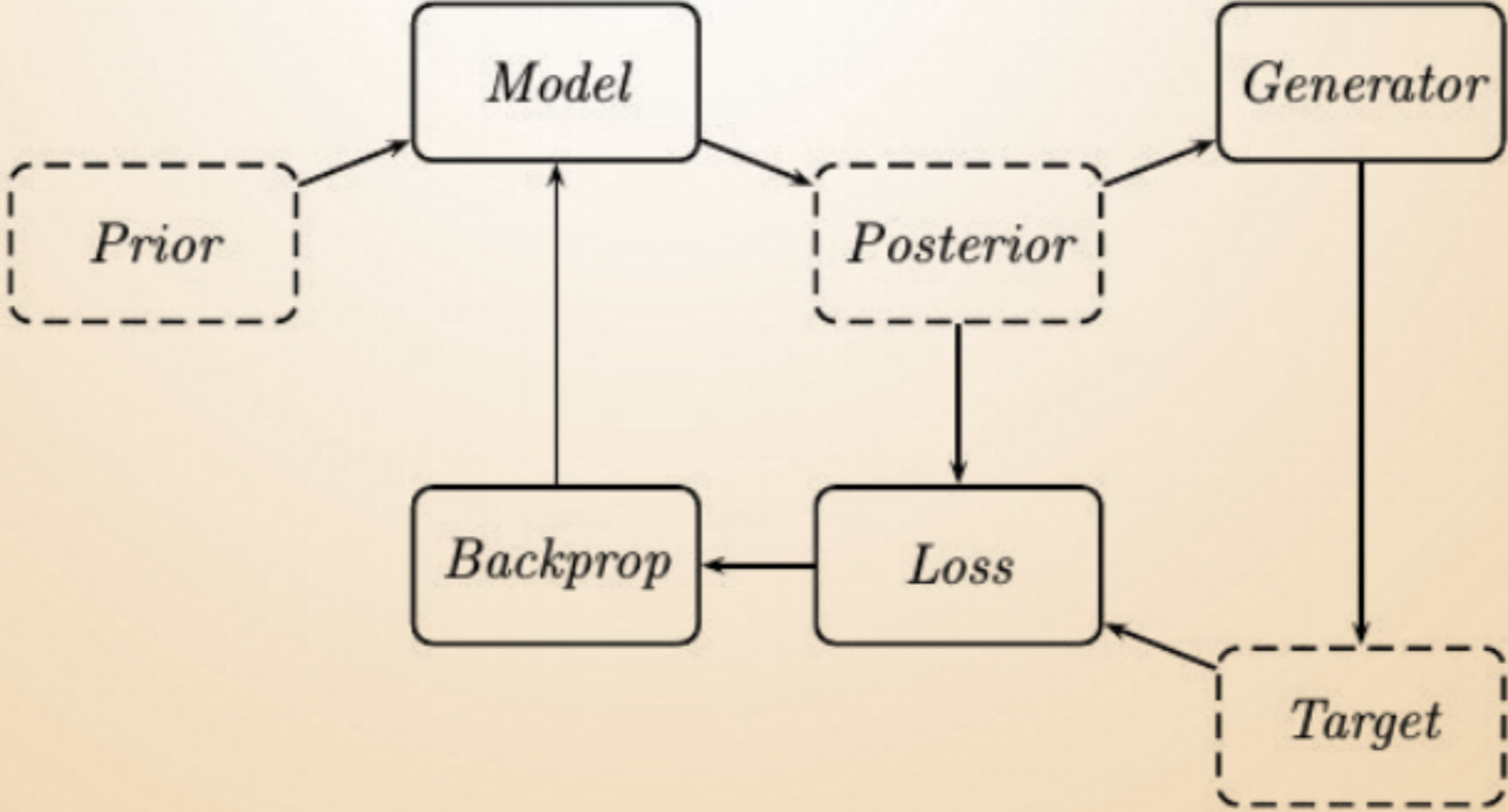$$S(X,Y;A,B) = AX(1-BY)$$

SNN GRAPH

SYNAMPL – SYNAPSE FULL CONNECTION NN

SYNACNN – SYNAPSE CONVOLUTION NN

SYNARNN – SYNAPSE RECURRENT NN

SNN LEARNING

SNN - NO MORE BLACKBOX!
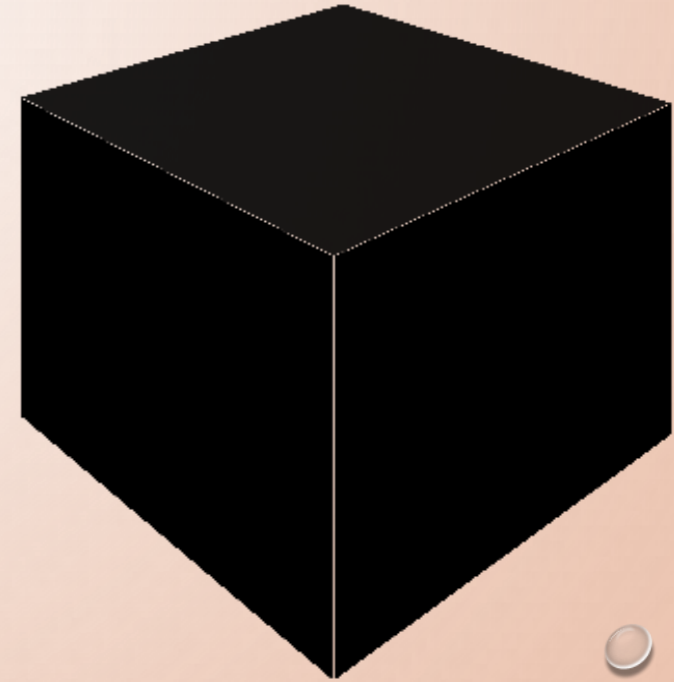
SNN PARAMETERS ARE MEANINGFUL

DISTRIBUTION VS DATA

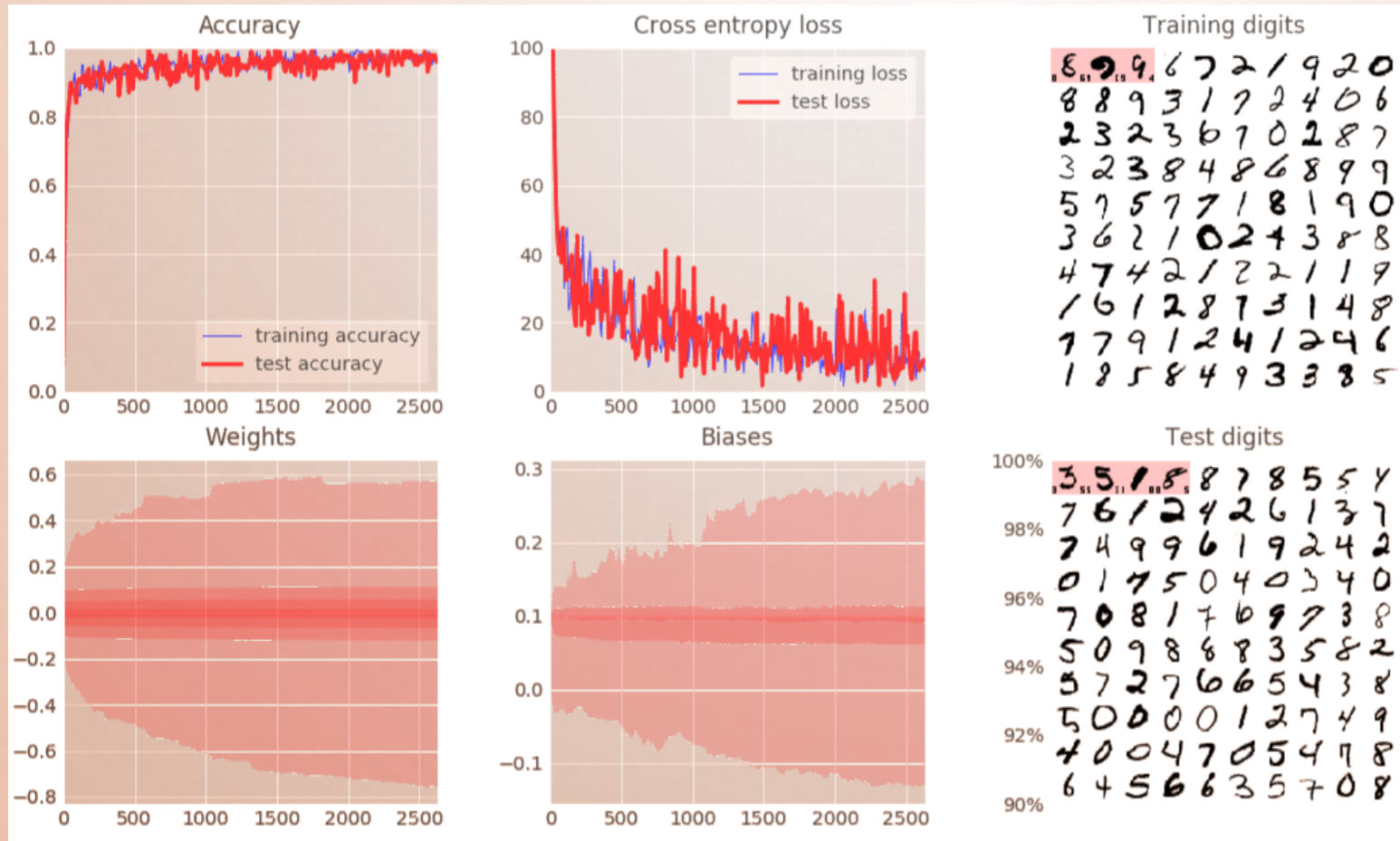DISTRIBUTION OVER DISTRIBUTION

TRAINED MODEL CAN BE ANALYZED

BY STATISTIC

SNN DEEP KNOWLEDGE

SNN IMPLEMENTATION AND TESTING

MNIST HANDWRITING DIGITS RECOGNITION

SNN TENSORFLOW IMPLEMENTATION AND VERIFICATION

ACCURACY 99%

SOLVED PROBLEMS: BATCH, ALLOC HUGE TENSOR SPACE

1ˢᵗ Category
SNN Applications

- ## Data

  Analyze sensor data from IoT and log data from Cloud

- ## Speech

  Recognition,synthesis, Natural Language Processing, Personal assistant

- ## Image

  Classifier, object and face recognition

- ## Vision

  Object detection, caption, segmentation, video processing and analysis

- ## Robotics

  Auto pilot, motor control by neural network, hand moving in 3D space

- ## Optimal

  Shortest path TSP, optimal resource allocation, associative memory

2nd Category SNN Applications

- ## Pharmacy

  Drug discovery and trial, clinical trial and protocol, cost-effectiveness analysis

- ## Finance

  Swap interest rate, swap currency rate, swap exchange rate

- ## Healthcare

  Disease and disorder diagnosis, control case and cohort studies

- ## Hedge fund

  Swap hedge exposure on oil & gas, agriculture commodities, metals

- ## Insurance

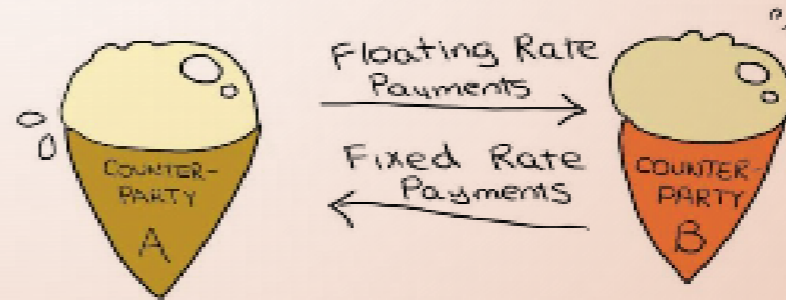 Basic and overall coverage, car, health, medical insurance

- ## Sports

  Betting odds and lines in horse racing, football, soccer, baseball

Finance

Swap interest rate, swap currency rate,swap exchange rate

Hedge fund

Swap hedge exposure on oil/gas, agricultural commodities, metals

SNN FOR FINTECH

BUILD FUNDAMENTAL RELATIONSHIP : SWAP & ODDS

APPLIED ODDS FOR RISK AND REWARD ANALYSIS

BY SYNAPSE LEARNING GET BETTER INVEST STRATEGIES

LINKED INSURANCE (ODDS) AND HEDGE (SWAP)

SNN PLATFORM

SNN WORKED ON CPU,GPU,FPGA,ASIC CHIPS & SYSTEMS

SNN COULD IMPLEMENTED IN DATAFLOW TECHNOLOGY

SNN COULD IMPLEMENTED IN ANALOG CIRCUIT

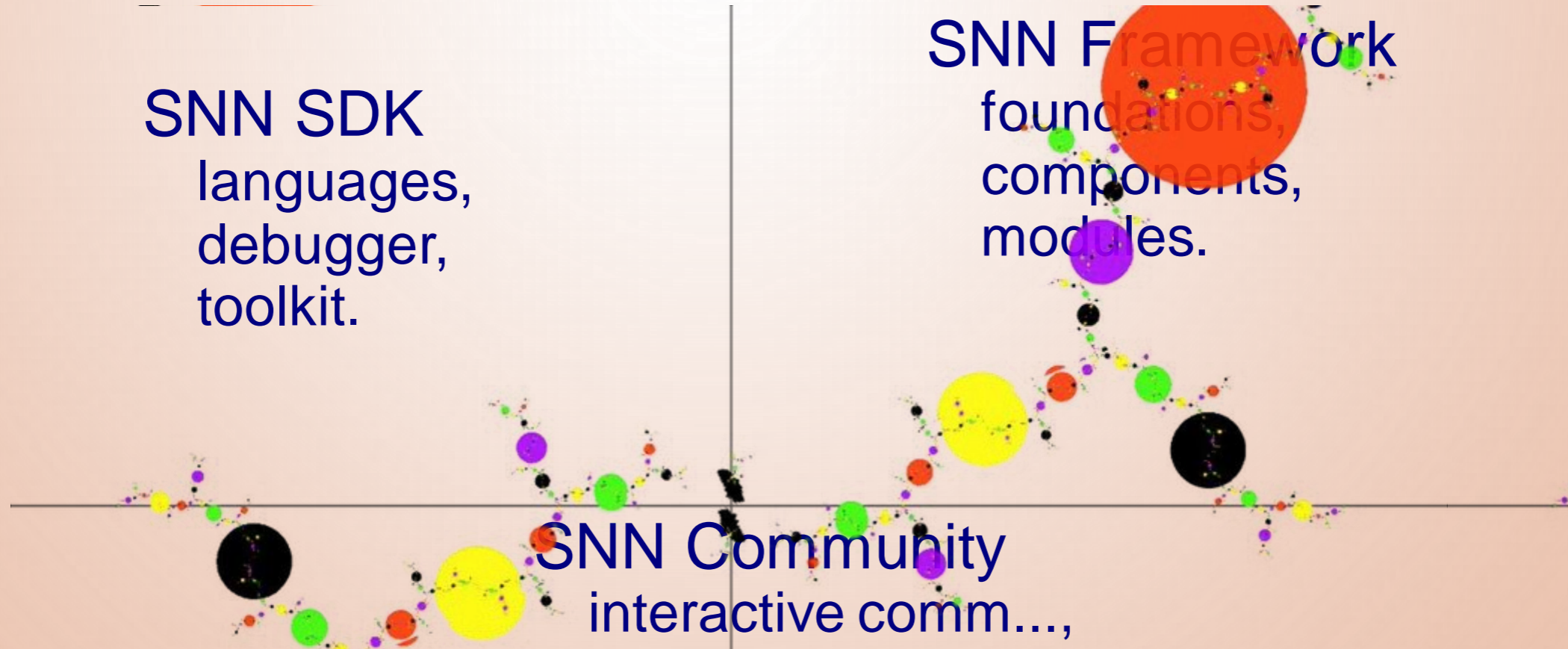**SNN PLATFORM** IS SUITABLE FOR LOW-POWER APPS AND
MASS PARALLEL CLOUD APPS WITH RICH SNN SOLUTIONS

SNN ECOSYSTEM

SNN SDK
languages,
debugger,
toolkit.

SNN Framework
foundations,
components,
modules.

SNN Community
interactive comm...,
problem solver,
developer support

SUMMARY

SNN PLATFORM IS AN INNOVATION FOR AI AND ML

SNN PLATFORM WORKS FOR 1ST AND 2ND GEN APPS

SNN BUSINESS IN IP & MODEL FOR AI SOLUTIONS

SNN BUSINESS IN COMPONENTS FOR AI APPS

SNN ECOSYSTEM EXPECT TO HAVE A PIECE OF AI PIE

SNN MAKES AI DIFFERENT!