

Photonic Artificial Neural Networks

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Chapter 1

Introduction

WHAT and WHY? BACKUP project, why silicon photonics (CMOS compatibility)

Chapter 2

Artificial Neural Networks

THEORY ON ANNs Artificial Neural Networks (ANNs) are computing devices which operate in way that mimics biological neural networks.

2.1 Types of ANNs

2.1.1 Feed Forward NN

FF NN node

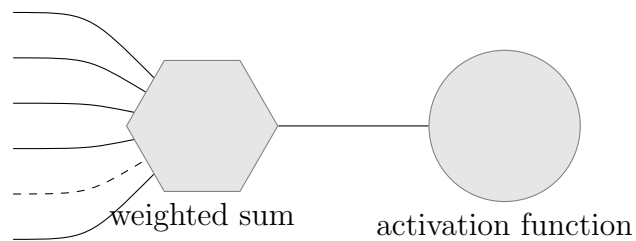


Figure 2.1: Feed Forward node

2.1.2 Other Types of ANNs

Chapter 3

Photonics applied to ANNs

3.1 Weighted sum of inputs

3.2 Nonlinear activation function

Chapter 4

Device, setup and measurements