Stock Price Prediction System

(Leader) 정동훈 2020312141
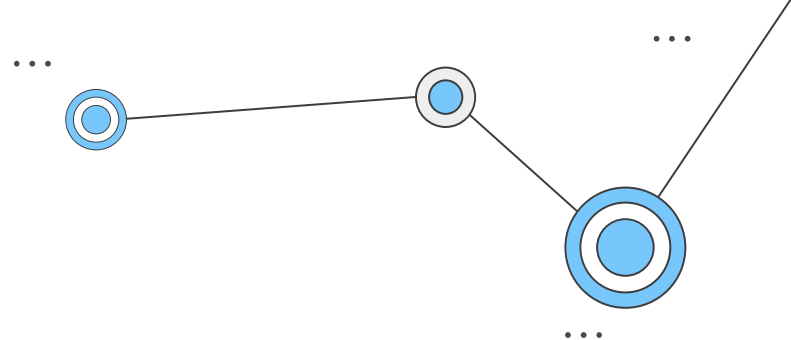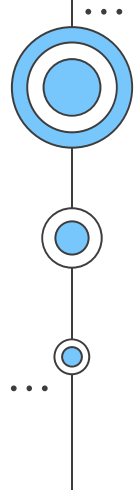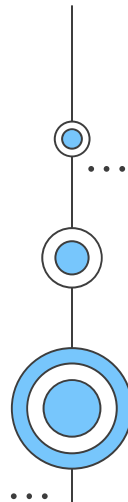(Presenter) 이찬영 2019313902
서유진 2018314589

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Motivation

**Have you ever
lost your money
in the stock market?**

This may help...

Because Everyone Needs Money

This is natural.
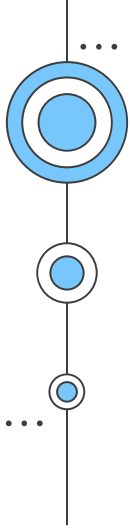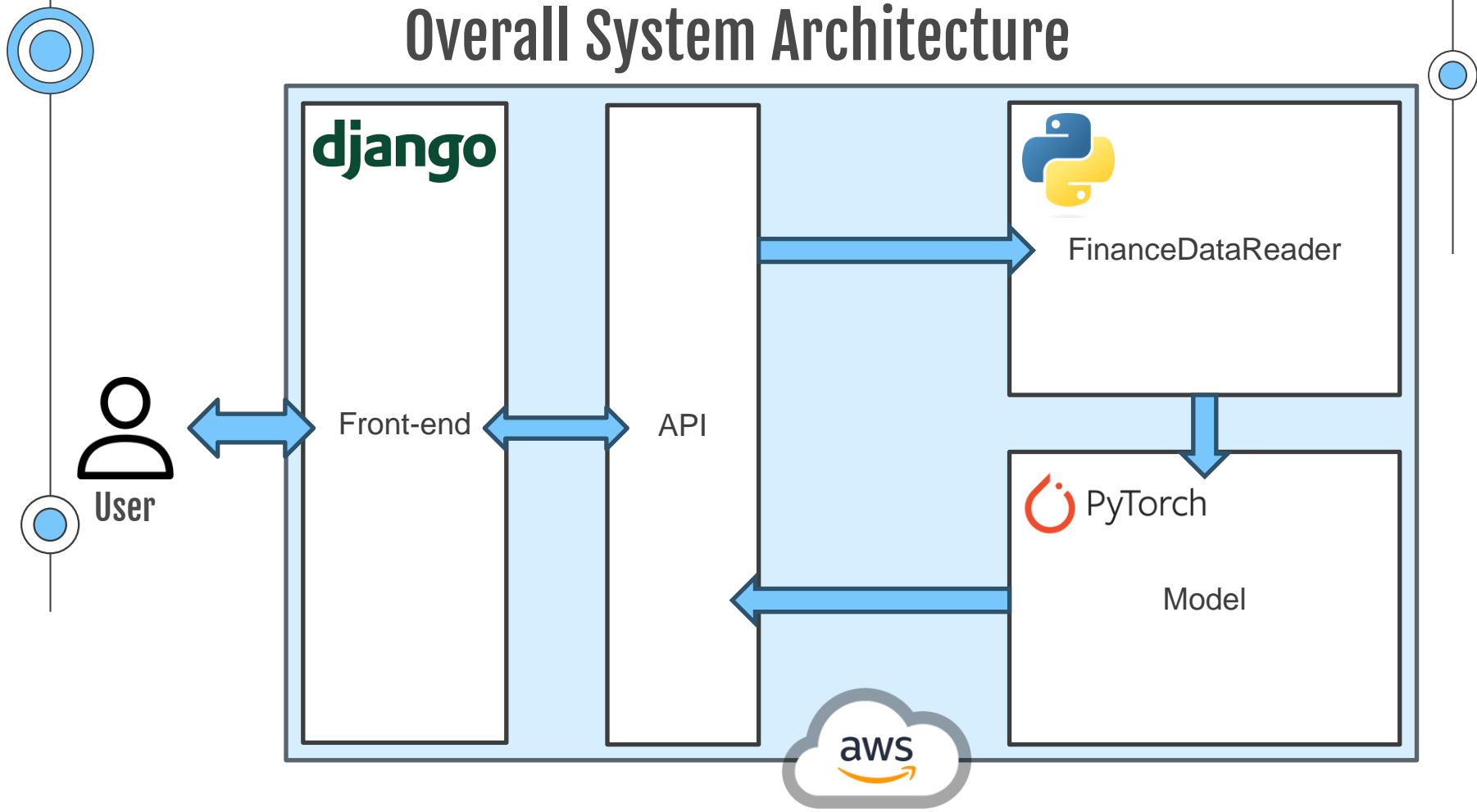
Project Overview

Prediction System

- **Build** a stock price prediction system

- **Enhance** its prediction quality

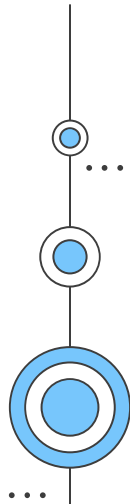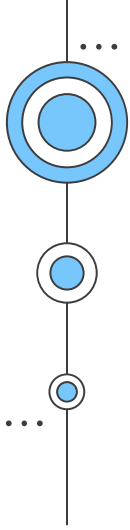- **Provide** as a service

02
System Architecture

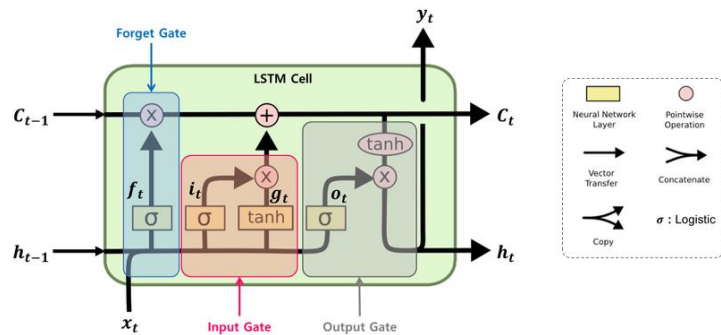# Overall System Architecture

03
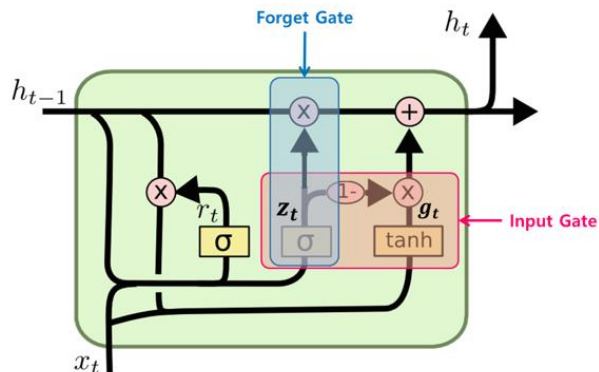# Technical Backgrounds

Candidate Model 1 : LSTM

LSTM : Long Short-Term Memory

- **Solves** gradient vanishing problem of RNN when input data is too long
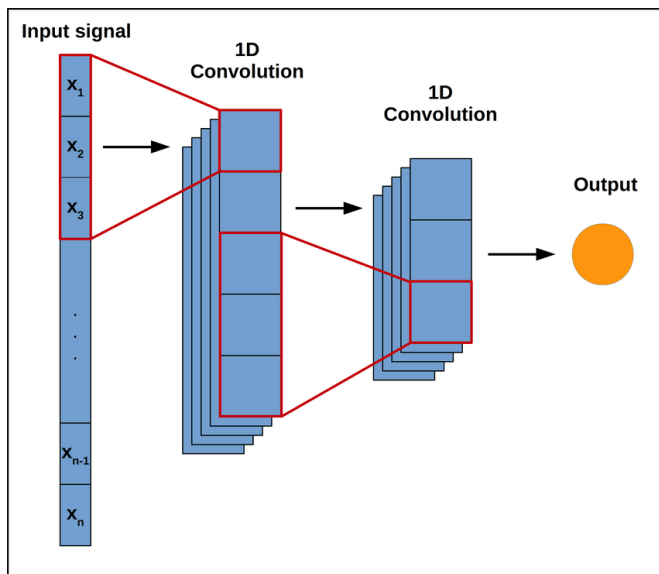
Candidate Model 2 : GRU

GRU : Gate Recurrent Unit

- **Also Solves** gradient vanishing problem of RNN when input data is too long

- **Simpler** structure than LSTM

Candidate Model 3 : CNN

Input signal
1D Convolution
1D Convolution
Output

x_1
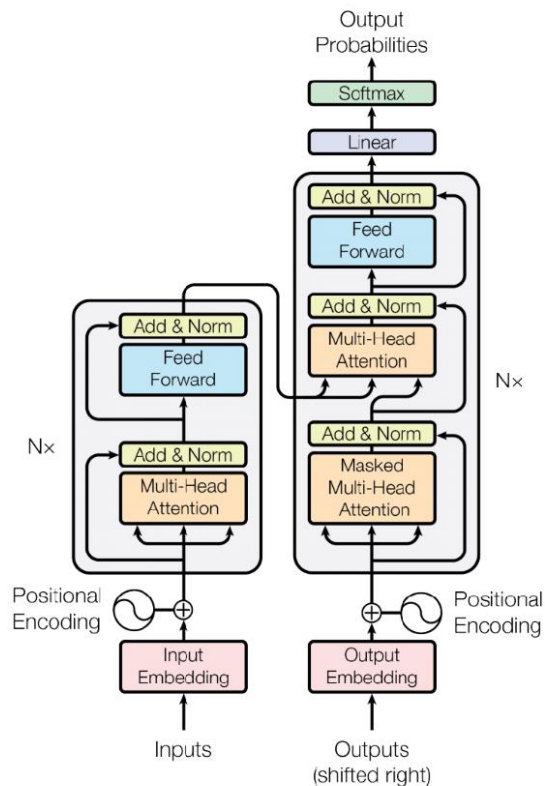x_2
x_3
x_{n-1}
x_n

CNN : Convolutional Neural Network

- **Simplest** architecture among candidates

- **Using 1d** instead of 2d since stock price data is represented by 1d vector

- **Can be** more efficient for Non-stationary data
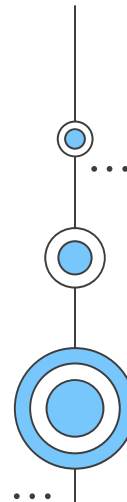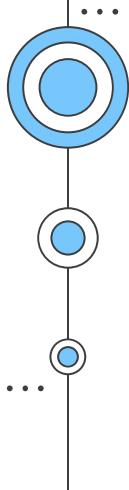
Candidate Model 4 : Transformer

Transformer

- **Encoder-Decoder** model using **Attention** mechanism

- **Commonly** used in NLP, but can be used in Time Series Prediction

- May **not be efficient** compared to other models

- **Needs** additional embedding

04
Tentative Schedule

Tentative Schedule

Week	3	4	5	6	7	8	9	10	11	12	13	14	15
정동훈 UI/UX Front-end	Preliminary Study		UI/UX Design		Front-end Development							Testing	
					AWS Server Building								
서유진 AI Back-end			Data Collection & Distillation		Model Implementation (GRU, CNN)		Performance Improvement						
					Back-end API Development								
이찬영 AI Back-end					Model Implementation (LSTM, Transformer)		Performance Improvement						
					Back-end API Development								
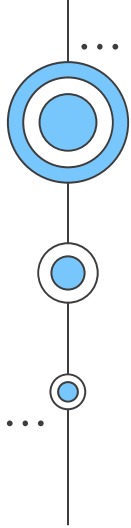
Thank You

Do you have any questions?