
SHIDA WANG

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EDUCATION

B.S. (Math), Fudan University, 2020

Ph.D. (Math), National University of Singapore (NUS), Expected 2024

Supervisor: Qianxiao Li

RESEARCH INTEREST

Sequence Modelling, Large Language Models, Dynamical System

PAPER

StableSSM: Alleviating the Curse of Memory in State-space Models through Stable Reparameterization (Under review)

Inverse Approximation Theory for Nonlinear Recurrent Neural Networks (Under review)

State-space models with layer-wise nonlinearity are universal approximators with exponential decaying memory (Neurips 2023)

A Brief Survey on the Approximation Theory for Sequence Modelling (JML)

Efficient Hyperdimensional Computing (ECML 2023)

EXPERIENCE

Internship at SAIL (2023.03-12):

Investigated the context length scale-up in language models

Second Place in Jane Street Electronic Trading Challenge, Summer 2022

Internship at Advance.AI (2021.08-10):

Investigated general anomaly detection techniques such as GAN and Autoencoder.

First Place in Citadel APAC Regional Datathon, Spring 2021

Teaching Assistant at NUS for DSA5102 (2020.08-11)

Internship at Megvii (2019.07-12):

Worked on basic models (ShuffleNetV2) and Neural Architecture Search models.

Worked on adaptive optimizers, which led to my first Ph.D. research project.

Internship at Goku Data Limited (2019.01-03):

Worked with daily stock price data and tried to produce some new factors

REVIEW EXPERIENCE

Reviewer for AISTAT 2023, 2024

SKILLS

Fluent in Python (PyTorch, JAX, TensorFlow), C/C++, Haskell

Familiar with data structure, algorithm, operating system, and parallel programming

PROJECT

Curse of memory in sequence modelling

RELATED COURSES

Probability, Markov Chain, Brownian motion and Stochastic Calculus, Stochastic Control, Optimal Stopping and Stochastic Control in Finance, Topics in Differential Equations (Fluid Equation), Optimization, Microeconomics, Macroeconomics