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# SHIDA WANG

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GitHub: <https://github.com/radarFudan>

## 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

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

StableSSM: Alleviating the Curse of Memory in State-space Models through Stable

Reparameterization (Under review)

Improve Long-term Memory Learning Through Rescaling the Error Temporally (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 (recurrent) language models

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 and Neural Architecture Search models.

## 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