

TAMIDS SciML Lab Workshop: Julia Softwares for Scientific Machine Learning

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Presenter

- Steven Shao-Ting Chiu - Ph.D. Student, Department of Electrical Engineering

Biography

Steven Shao-Ting Chiu is currently a Ph.D. student in the Department of Electrical Engineering at Texas A&M University. He holds a Bachelor of Science in Electrical Engineering and a Master of Science in Bioinformatics at National Taiwan University, completed in 2018 and 2021 separately. In 2021, he was an intern at Pumas-AI, Inc., and implemented Scientific Machine Learning tools for the application of pharmaceuticals and personalized medicine.

Background and Objectives

Julia (<https://julialang.org/>) is a generic programming language designed for high performance computing, and an open source project under MIT license. Julia language is aimed to solve the “two language problem” that typically occurs in scientific computing. Julia is dynamically typed like scripting language such as Python, and can be compiled to native machine code. Besides, composability via multiple dispatch makes Julia work well on the integration across packages. The SciML (<https://sciml.ai/>) is an open source software for scientific machine learning based on Julia language, that combines machine learning and scientific computing together by integrating numerous standalone packages.

This workshop aims to introduce the potentials of the Scientific Machine Learning Field with Julia programming language.



Schedule

Table 1: Schedule

Time	Content
20 min	Introduction to the Julia Programming Language
20 min	Introduction to Julia SciML Ecosystem
10 min	Break
20 min	Hands-on session with neural differential equation
20 min	Hands-on session with SciML application