LASIGE data and systems intelligence

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Vectorial Genetic Programming for Symbolic Regression with Timeseries

Speaker

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Affiliation

Heuristic and Evolutionary Algorithms Laboratory
University of Applied Sciences Upper Austria

When

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Where

C6.3.27

Abstract

Using timeseries data in genetic programming (GP) typically involves either feature extraction, where some information might be lost, or preserving all data by splitting the timeseries into multiple features, which is unpracticable for longer timeseries. Using vectorial GP, we can keep all available information while not overwhelm GP with too many features. Consequently, extracting useful information from the timeseries is pushed towards the GP model, where the feature extraction is just part of the model itself. We will look at recent and current research regarding vectorial GP, discussing advantages and ongoing challenges. We will also briefly look at current research conducted at HEAL in the area of symbolic regression and GP.

Short Bio

Philipp Fleck is a PhD student at the University of Applied Sciences Upper Austria, mainly working on research projects with industry partners, focusing on interpretable machine learning, data preprocessing and data visualization. He obtained his bachelor and master's degree in software engineering at the University of Applied Sciences Upper Austria and is working on his PhD since 2020, which is focusing on using timeseries for symbolic regression with vectorial genetic programming. Philipp Fleck also teaches various courses at the University of Applied Sciences about machine learning and software development in general.

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