EDITH COWAN UNIVERSITY

PROJECT DETAILS

Project Title:

Evolutionary Principles with Artificial Neural Networks

Project Summary:

The aim is to bring together concepts from Evolutionary Algorithms (EA) and Artificial Neural Networks (ANN). ANNs are a family of AI architectures, where interconnected 'neurons' are trained using a machine learning algorithm (typically backpropagation). EAs are an optimization approach, applied to ANNs as both an alternative to backpropagation, and to optimize architecture and hyperparameters.

This project will investigate how modern ANN concepts, such as transformers and generative models can work together with EAs to offer a more 'intelligent' solution to problems in classification and behaviour optimisation. Focus will be put on facilitating human-AI collaboration, rather than fully autonomous automation.

Preferred Applicant Skillset:

Looking for a well-organised candidate with strong technical (programming, algorithm understanding) capability, who would not be satisfied with merely using someone else's approach on a new dataset or some pedestrian incremental advancement on current techniques. As such, the candidate will need to demonstrate creativity in their ideas and the ability to think 'out of the box'.

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