Contribution ID: **62** Type: **Lightning Talk**

A Machine Learning Software Infrastructure for Gravitational Wave Signal Discovery

Machine Learning methods for gravitational wave signal discovery have shown a lot of promise. However, the current literature contains huge variability in algorithm design choices, from architecture selection to dataset engineering, making it very difficult to disentangle which design choices ultimately lead to better model performance. We present here an end to end software infrastructure for fast evaluation of ML algorithms aimed at detecting signals from compact binary coalescences (CBC's). The fully automated infrastructure allows us to alter any component of our algorithm, and quickly determine if these changes led to model improvements.

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