

# From Images to Knowledge with ImageJ & Friends

virtual conference

**Nov 30 - Dec 2, 2020**

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## WekaDeeplearning4j - State-of-the-art Deep Learning Techniques for Non-Programmers

**Tutors:** Rhys Compton (rhys.compton@gmail.com)

**Session 1:** 2020-12-01 05:00 UTC – 2020-12-01 09:00 UTC

**Session 2:** 2020-12-01 18:30 UTC – 2020-12-01 22:30 UTC

## Information about the Tutor

Rhys Compton is a Software/Machine Learning Engineer based in Hamilton, New Zealand. Rhys graduated from the University of Waikato with a BE (Hons, First Class) majoring in Software Engineering, focusing his study on Machine Learning (ML). Rhys has been awarded a Fulbright Scholarship to do his Masters in Computer Science at New York University in 2021, further researching ML applications in the healthcare sector. Rhys is also the current maintainer of WekaDeeplearning4j, a Deep Learning package for the well-known WEKA workbench.

## Title and Abstract of Tutorial

WekaDeeplearning4j - State-of-the-art Deep Learning Techniques for Non-Programmers

WekaDeeplearning4j is a deep learning package for the WEKA workbench, developed to incorporate the modern techniques of deep learning into WEKA. Rhys has recently been adding some exciting new features to the package including a **Model Zoo** (pre-trained SOTA models), improved **Image Feature Extraction**, a new **Inference Panel** (easy experimentation with different models/images), and **Saliency Map Generation** (explaining where a neural network is 'looking' in an image for classification). Rhys will be demonstrating these features using real-world datasets, showing how the new package can empower your workflow and gain more information from your image data.

## Rough Outline

There will be short breaks roughly every hour to keep everyone fresh, timed around some of the longer-running processes in the tutorial (e.g., training a model)

- Topic Introduction (30min)
- Student Introductions (45 min)
- Project Setup (15 min)
- Project Walkthrough (2h)
- Summary and Questions (30 min)

## Technical Requirements

- Windows, Mac, or Ubuntu machine
  - A high-end CPU is ideal, but not required
- (Optional) GPU with appropriate drivers installed
  - All of the tutorial material will be designed for a non-GPU machine, although if you have one available then it will make some parts quicker. GPU setup with WekaDeeplearning4j will be explained in the tutorial (provided you already have the GPU drivers installed)
- A project assets file will be released closer to the tutorial which will contain the datasets/models used in this tutorial; if possible please download this ahead of the tutorial.

Max Students  
12 Students

Screenshot

