**Naïve Bees: Deep Learning with Images**

Build a deep learning model that can automatically detect honey bees and bumble bees in images.

#### Project Description

Can a machine distinguish between a honey bee and a bumble bee? Being able to identify bee species from images, while challenging, would allow researchers to more quickly and effectively collect field data. In this project, you will build a simple deep learning model that can automatically detect honey bees and bumble bees, then load a pre-trained model for evaluation. You will use [keras](https://keras.io/), [scikit-learn](http://scikit-learn.org/stable/tutorial/basic/tutorial.html), [scikit-image](http://scikit-image.org/docs/stable/), and [numpy](https://docs.scipy.org/doc/numpy-1.14.2/reference/), among other popular Python libraries.

This project is the third part of a series of projects that walk through working with image data, building classifiers using traditional techniques, and leveraging the power of deep learning for computer vision.

The recommended prerequisites for this project are [Advanced Deep Learning with Keras in Python](https://www.datacamp.com/courses/advanced-deep-learning-with-keras-in-python), [Introduction to Data Visualization with Python](https://www.datacamp.com/courses/introduction-to-data-visualization-with-python), [Naïve Bees: Image Loading and Processing](https://www.datacamp.com/projects/374), and [Naïve Bees: Predict Species from Images](https://www.datacamp.com/projects/412).

#### Project Tasks

* 1 Import Python libraries
* 2 Load image labels
* 3 Examine RGB values in an image matrix
* 4 Normalize image data
* 5 Split into train, test, and evaluation sets
* 6 Model building (part i)
* 7 Model building (part ii)
* 8 Compile and train model
* 9 Load pre-trained model and score
* 10 Visualize model training history
* 11 Generate predictions