**Introduction**

Python is one of the most popular languages in the world, being used for embedded, host and cloud application development thanks to its ease of use – Programmable Logic provides the ability to implement very high performance algorithms, traditionally at the cost of complexity of design.

PYNQ fuses the productivity and ease of use of Python with the acceleration provided by Programmable Logic, without the need to be an digital design engineer. This series of three workshops is going introduce PYNQ from the very beginning introducing key concepts, techniques and elements of the PYNQ ecosystem, progressing to an advanced level as custom applications are created using PYNQ as the attendees competence increases over the sessions.

**Session 1 – Getting started with PYNQ**

This session will introduce the PYNQ Framework along with the PYNQ Z2 and its capabilities. Primary focus will be on the base and logic tool overlays which come with PYNQ Z2, these overlays enable us to interface with peripherals and access lower level digital logic functionality such as the Pattern Generation, FSM Generation and Logic Tracing. This session will also look at the existing overlays within the PYNQ community and how they can be installed into the PYNQ Z2 for future use.

**Session 2 – Getting Up and Running with PYNQ**

This session will look at how we can build our own overlays for the PYNQ framework. To aid us in the creation of this application we will look at the existing PYNQ IP cores which are provided as part of the PYNQ Frame work and are available from the PYQ Github. Once this overlay has been created we will be using the Jupyter notebook to understand how we can control with the application. This session will also show how to create GitHub repositories which can be used to share overlays

**Session 3 – Unlocking the inner PYNQ Hero**

This session will build on the skills used in session 2 to create a PYNQ overlay which implements an application. This will application will focus on creating a embedded vision system which uses a HDMI camera to receive images before processing the image to extract information using OpenCV.

**Schedule**

I propose the following dates

1. First Session 5th May – From Chicago office
2. Second Session 19th May
3. Final Session 2nd June