# Project Specification

List of deliverables

* Implementation of CNN on FPGA
* Investigation of fault tolerance in the present of bitstream corruptions (introduced in e.g. high radiation environments)

# Background

A couple of references

* Background Deep Learning, CNNs
* Background on FPGAs the benefits of this technology for CNN implementations
* (HLS)
* Background on FPGA implementations in space applications (resilience issue)

# Implementation Plan

* Infrastructure setup (SDSoC, Caffe)
* FPGA implementation of CNN with SDSoC
* Optimisation of FPGA implementation
* Fault injection experiments
  + Include SEM IP core in Vivado project
  + Zynq Linux host code (print quality results after run)
  + Run testbench scripts on SoCDrawer

# Evaluation Plan

* Execution time comparison with literature
* Resource utilisation
* Fault tolerance results