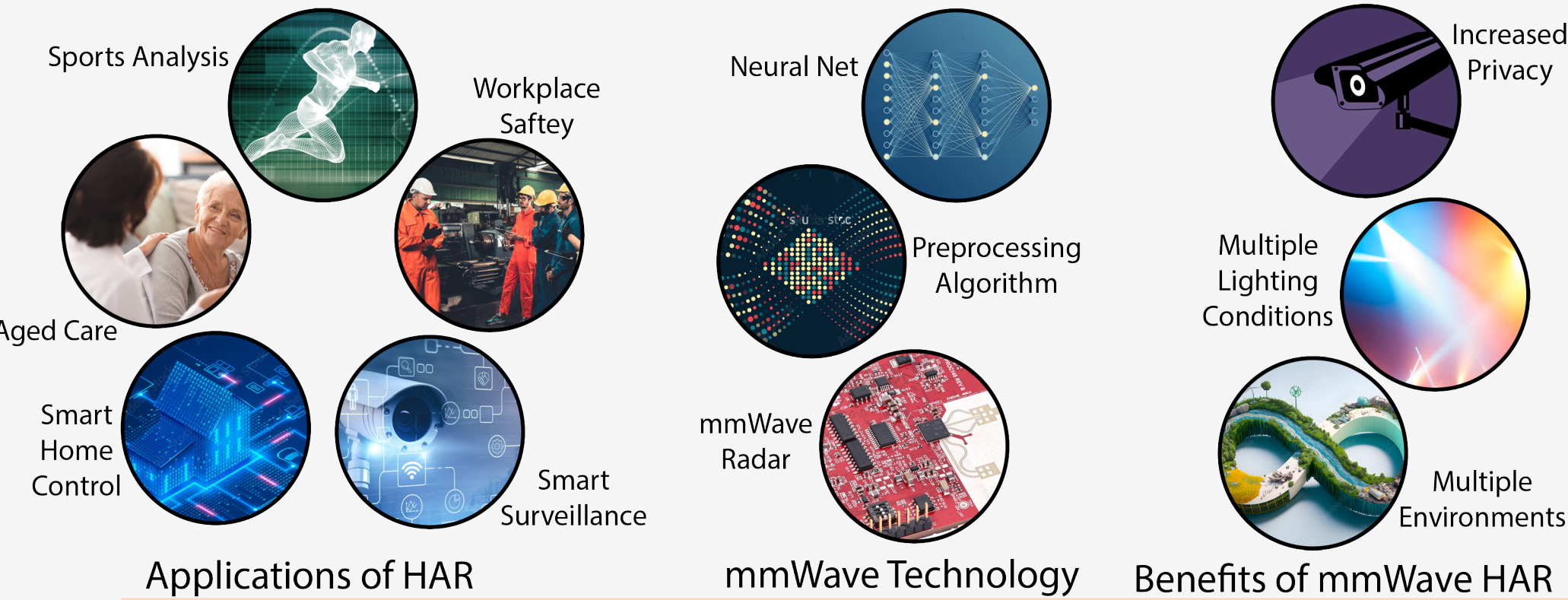


Project 77: Milimeter Wave Radar based Human Activity Recognition

Beck Busch & Samuel Mason
Supervised by Dr. Kevin I-Kai Wang and Akshat Bisht

Background

Human activity recognition is an exciting area of development that allows systems to identify and respond to human actions and behaviour. mmWave radar promises to improve this field with more robust and privacy-focused tech. Our system takes raw data from the radar and passes it through a preprocessing algorithm before classifying the data using an innovative neural network approach.

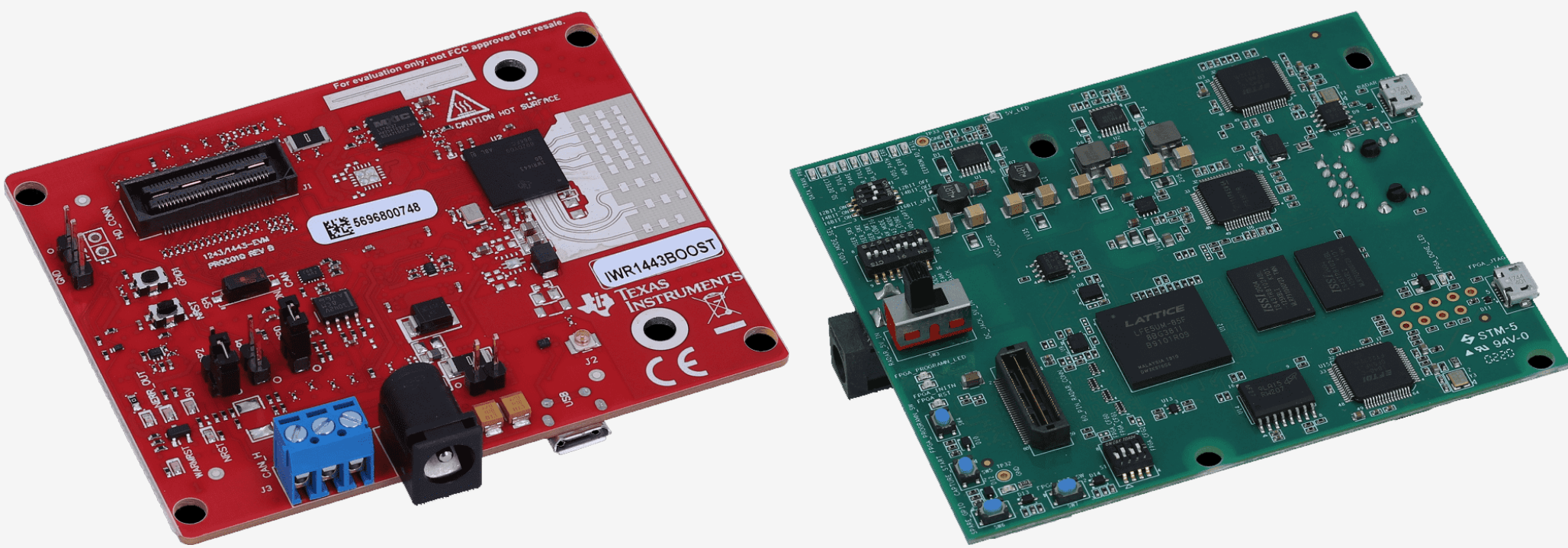


Goals & Objectives

Filler text

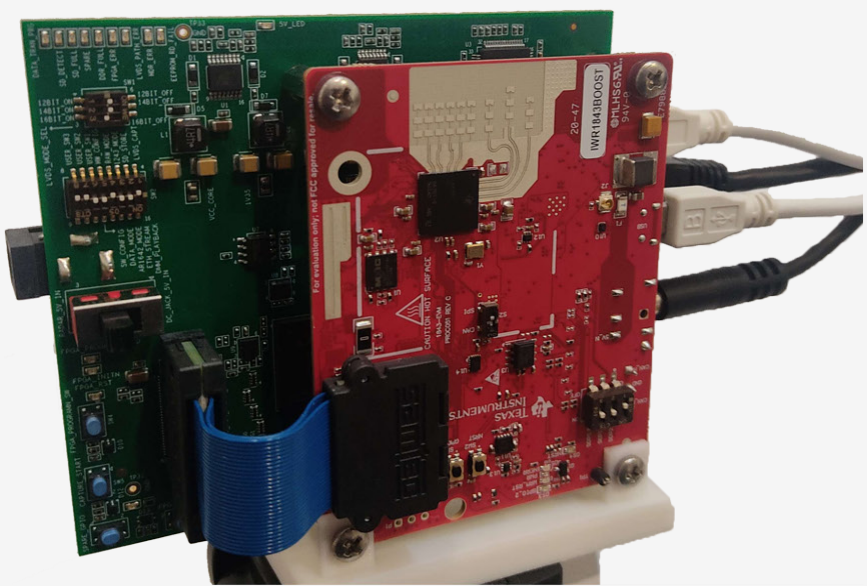
Data Processing

Our radar setup involves an IWR1843 BOOST radar module paired with a DCA1000EVM evaluation board. The DCA1000 allows us to directly access the ADC data from the radar without the module compressing or transforming the data. This provides a greater level of control over how the data is manipulated, tailoring the process precisely to our needs. The boards are linked with a high-capacity data cable and bolted to a 3D-printed base. This entire assembly is attached to a tripod before being aimed at the recording target.

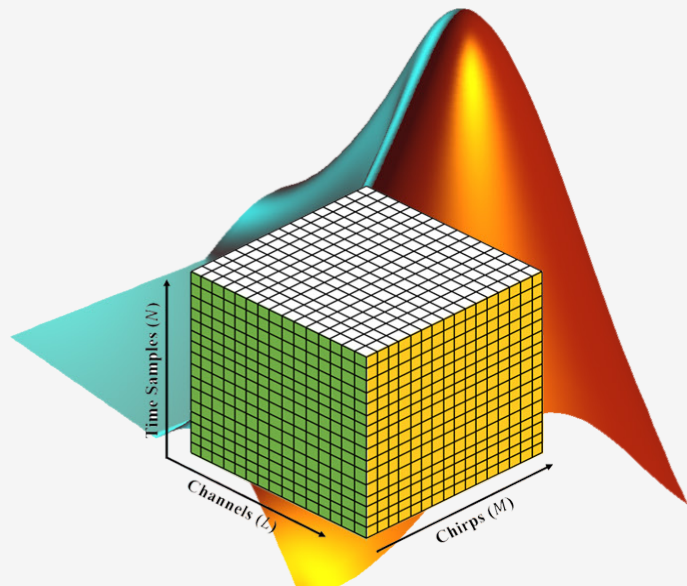


Model Development

Sedis essitiu ndandus. Por as rem quunt quatiandis que nonse nulles dolore pelestis dolorest que parcid estiosanis sunda simuscidem hil molo idusam, omniminvelit voluptatio cusdae nullaut prepratione in remolore maiore dolorestori qui od que expel iditibe atempedis venesci mporibu stotaquo quo dolore postiam a vel mo doloritist quia volorio. Et eum quam sit exeriatur, omnime resequide doluptatem quodcid ut ad ullaborem voloreseque core que plit, corehendam dia prerumque laut et ut eossunt eturibus repedi dit rehentin explabo. Gendio int magna sum quunt am rerum rempererum aditas etust fugias et volestium into eium eumquis dolorrovit re sinist ma quamus dolore, quiduciis dolor simolore corecaerion nit delesto enimodi



mmWave Radar



Pre Processing



Neural Network

Methodology

Sedis essitiu ndandus. Por as rem quunt quatiandis que nonse nulles dolore pelestis dolorest que parcid estiosanis sunda simuscidem hil molo idusam, omniminvelit voluptatio cusdae nullaut prepratione in remolore maiore dolorestori qui od que expel iditibe atempedis venesci mporibu stotaquo quo dolore postiam a vel mo doloritist quia volorio. Et eum quam sit exeriatur, omnime resequide doluptatem quodcid ut ad ullaborem voloreseque core que plit, corehendam dia prerumque laut et ut eossunt eturibus repedi dit rehentin explabo. Gendio int magna sum quunt am rerum rempererum aditas etust fugias et volestium into eium eumquis dolorrovit re sinist ma quamus dolore, quiduciis dolor simolore corecaerion

Results

Filler text

Radar Setup

This project represents a vast amount of work, and requires more investigation to see usable results.

Future Works

Sedis essitiu ndandus. Por as rem quunt quatiandis que nonse nulles dolore pelestis dolorest que parcid estiosanis sunda simuscidem hil molo idusam, omniminvelit voluptatio cusdae nullaut prepratione in remolore maiore dolorestori qui od que expel iditibe atempedis venesci mporibu stotaquo quo dolore postiam a vel mo doloritist quia volorio. Et eum quam sit exeriatur, omnime resequide doluptatem quodcid ut ad ullaborem voloreseque core que plit, corehendam dia prerumque laut et ut eossunt eturibus repedi dit rehentin explabo. Gendio int magna sum quunt am rerum rempererum aditas etust fugias et volestium into eium eumquis dolorrovit re sinist ma quamus dolore, quiduciis dolor simolore corecaerion nit delesto enimodi Sedis essitiu ndandus. Por as rem quunt quatiandis que nonse nulles dolore pelestis dolorest que parcid estiosanis sunda simuscidem hil molo idusam, omniminvelit voluptatio cusdae nullaut prepratione in remolore maiore dolorestori qui od que expel iditibe atempedis venesci mporibu stotaquo quo dolore postiam a vel mo doloritist quia volorio. Et eum quam sit exeriatur, omnime resequide doluptatem quodcid ut ad ullaborem voloreseque core que plit, corehendam dia prerumque laut et ut eossunt eturibus repedi dit rehentin explabo. Gendio int magna sum quunt am rerum rempererum aditas etust fugias et volestium