

# Yojan Chitkara

📍 Rajeshwari Homes Apartment , RR Nagar | Bangalore , Karnataka | India

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## Education

- 2015-2019 **BACHELOR OF ENGINEERING** *R.V College Of Engineering (IND)*  
Bachelors in Electronics and Telecommunication Engineering  
GPA : 9.26 (out of 10.0), Rank 3 out of 73
- 2014-2015 **12TH GRADE** *National Hill View Public School (IND)*  
Physics , Chemistry , Mathematics , Computer Science  
Overall Percentage : 94.2, Rank 5 out of 72
- 2013-2014 **11TH GRADE** *National Hill View Public School (IND)*  
Physics, Chemistry, Mathematics , Computer Science  
Overall Percentage : 90
- 2012-2013 **10TH GRADE** *National Hill View Public School (IND)*  
Physics , Chemistry , Biology , Mathematics , History , Geography , Political Science  
Overall GPA : 10.0 (Out of 10.0)

## Publications

- 2021-22 **A SYNTHETIC CXL TRAFFIC GENERATOR FOR SOC PERFORMANCE VALIDATION** *Developing a NUMA Aware Synthetic CXL Workload in C++ to compute Performance (Latency and Bandwidth) and implement False Sharing between CXL Subsystems.*  
**Published at Design and Test Technology Conference - 2022 (Intel Corporation Internal)**  
**Presented at SuperCompute'22 (Intel) - [Link] [Github]**
- 2021-22 **STATISTICAL POWER MODELLING FOR A GRAPHICS PROCESSING UNIT** *The need for power estimation and performance modelling in GPUs and the statistical modelling algorithms implemented to achieve an accurate power prediction model running compute applications like cuBLAS, cuDNN and cuFFT. Implemented a Power Model with error accuracy of 5.2% and 19 dependent variables.*  
**Published at International Conference on IoT in Social, Mobile, Analytics and Cloud - 2022.**  
**[pdf][cert]**
- 2020-21 **A HOST-LESS APPROACH TO VALIDATE CXL TEST CARD IN EMULATION** *Bus Functional Modelling of a CXL Host Processor using C++ to aid in CXL Test Card Emulation.*  
**Published at Design and Test Technology Conference - 2021**  
**Intel Corporation Internal**
- 2018-19 **BACKGROUND MODELLING TECHNIQUES FOR FOREGROUND DETECTION AND TRACKING USING GAUSSIAN MIXTURE MODEL 1.)** *To present the improvements in Object detection and tracking using Background Models (Implemented using Gaussian Mixture Modelling, by creating a model of the background in video frames.) when compared to Foreground Detection (Supervised Learning Algorithms) techniques.*  
2.) *Able to limit the amount of False Positive detections to 10% with a 100-fold drop in training data.*  
**Published at International Conference on Computing Methodologies and Communication - 2019. [pdf] [Github][cert]**
- 2018-19 **INSPECTION, IDENTIFICATION AND REPAIR MONITORING OF CRACKED CONCRETE STRUCTURES –AN APPLICATION OF IMAGE PROCESSING 1.)** *Detection and Segmentation of Cracks using CANNY and SOBEL filters implemented using MATLAB with a camera attached to a UAV.*  
**Published at International Conference on Communication and Electronics Systems - 2018**  
**[pdf] [cert]**

## Patents

- 2022-23     **A METHOD TO SHARE MEMORY COHERENTLY ACROSS SYSTEM NODES USING CXL PROTOCOL**  
*Presenting a mechanism to share memories across systems without the use of huge back-store memories on CXL by earmarking a region of conventional memory from one of the connected system nodes. CXL protocol helps maintain coherency across the nodes thus eliminating the need for double-copying*  
*[Ack attached in documents]*  
**Submitted and Under Review USPTO**

## Industry Experience

- December 2019 - Current     **INTEL CORPORATION**  
**FPGA Hardware Engineer**  
1) I work on the Functional Verification and Performance Validation of Compute Express Link enabled **FPGA designs**.  
2) I have been involved in developing C/C++ workloads to validate cache-coherency by implementing false sharing scenarios and computing bandwidth and latency of CXL enabled Intel FPGAs and CPUs.
- Jan-July 2019     **NVIDIA GRAPHICS PVT LTD**  
**ASIC System Design Intern**  
1.) I worked on power & performance analysis of compute workloads on a GPU running CUDA developed applications like cuBLAS/cuDNN/cuFFT.  
2) Here we enabled power aware design for GPUs by Statistical Modelling for Power using Machine Learning algorithms.  
3) I was able to create a statistical power model that predicted the power output for Nvidia Turing GPUs with an error accuracy of 5.2% and 19 dependent variables.
- June-July 2018     **IIM BANGALORE - PENBOUND**  
**Application Developer and Web Designer for Plop**  
1.) I worked on developing front end UI for a Mobile Application on Android OS and interactive website for **Plop Stories** using React Native (ReactJS) framework and handled backend requests using Redux framework.
- May-July 2017     **CENTER FOR DEVELOPMENT OF TELEMATICS**  
**Mobile Application Developer for the Public Data Office App using Android Studio Software.**  
1.) I worked on handling Front end and Back end development of **PDO** using a Mobile Application created on Android Studio which provides Wi-Fi portability to small scale industries and the rural population.  
2.) Controlling requests using a back end of PHP and MYSQL linked to Android Studio using the JSON frame/packet structure, monitored using wireshark.

## Achievements

- 2011-2012     Top 10 percent in School *International Association Of Physics Teachers (IAPT)* [[Link\(Awards\)](#)]
- 2014-2015     Topper in School *AISSE Rank Holder for English* [[Link\(Awards\)](#)]
- 2019     Top 5 percent in ETE *Rank Holder - 3rd Rank for Electronics and Telecommunications Engineering* [[Link\(Awards\)](#)]

## Software Skills

**PROGRAMMING LANGUAGES** : CUDA, Python, C++/DPC++, C, Scala, System Verilog , Java , Perl , PHP , MySQL  
**PLATFORMS USED** : MATLAB , LabVIEW , PSpice , oneAPI , Simulink , Quartus Prime.