Yojan Chitkara

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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)

2014-2015 **12TH GRADE** *National Hill View Public School (IND)*
Physics , Chemistry , Mathematics , Computer Science
Overall Percentage : 94.2

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)

Courses taken apart from Majors

2016 **CERTIFIED PREDICTIVE ANALYTICS COURSE** *R.V College of Engineering (Autonomous) Bangalore*
Overall Grade : O (Outstanding)

2018 **CERTIFIED CRYPTOGRAPHY AND NETWORK SECURITY** *(Coursera an Online Platform) Stanford University* . Overall Grade : O (Outstanding)

Industry Experience

December 2019 - Current **INTEL CORPORATION**
FPGA Hardware Engineer
1.) Coherent Architecture Validation on Intel Servers and CPUs. (Compute Express Link and Ultra-Path Interconnect)
2.) Bus Functional Modelling (Transaction Layer Verification Model) of Coherency Protocol in a Heterogeneous Computing Environment and triage performance issues in RTL.
3.) Performance Validation of CXL.cache and CXL.mem protocol on Intel Servers, using internally developed tools to characterise Bandwidth and Latency.

January-July 2019 **NVIDIA GRAPHICS PVT LTD**
ASIC System Design Intern
1.) Performance Analysis for compute workloads on a GPU.
2.) GPU Architecture (Power aware design) and Statistical Power Modelling using Machine Learning.
3.) Post Silicon Power Estimation and Power Analysis for compute workloads on a GPU.
4.) GPU Validation set up, reading PCB specifications and profiling GPU's to estimate for power and performance using Digital Aquisition Units (DAQ) and Digital Multimeters (DMM).

May-July 2017 **CENTER FOR DEVELOPMENT OF TELEMATICS**
Mobile Application Developer for the Public Data Office App using Android Studio Software.
1.) Working with 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.

Publications and Patents

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 filers implemented using MATLAB with a camera attached to a UAV.*
Published at International Conference on Communication and Electronics Systems - 2018
Link : https://ieeexplore.ieee.org/document/8723898

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.
Link : https://ieeexplore.ieee.org/document/8819825

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 Internel

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.*
Published at International Conference on IoT in Social, Mobile, Analytics and Cloud - 2022.
IEEE-Xplore ISBN: 978-1-6654-6941-8
Link : Not available yet (Paper and Certificate attached)

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 Subsytems.*
Published at Design and Test Technology Conference - 2022 (Intel Corporation Internel)
Presented at SuperCompute'22 (Intel) - https://www.computeexpresslink.org/sc-22
Github : https://github.com/ychitkar

2022-23 **PATENT : 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*
Submitted to Intel Patent Group committee, Under Review

Achievements

2011-2012 Top 10 percent in School *International Association Of Physics Teachers (IAPT)*

2014-2015 Topper in School *AISSCE Rank Holder for English*

2019 Top 5 percent in ETE *Rank Holder - 3rd Rank for Electronics and Telecommunications Engineering*

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.