Gokulan Ravi

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Education

2015-Present	**5th Year, Dual Degree (B.Tech+M.Tech) in Computer Science & Engg.**, *Indian Institute of Technology Madras*, Chennai.	*CGPA : 7.98/10,*
2014-15	**XII - CBSE**, *Maharishi International Residential School*, Chennai,	95.8% .
2012-13	**X - CBSE**, *Maharishi International Residential School*, Chennai,	*CGPA :9.8.*

Work in Progress for Publications

Bottleneck analysis of systolic array and novel architectures for DL inference.
- An open-source systolic-array based acclerator, co-processor to Shakti C-Class processor
- The tool is a cycle-accurate simulator to explore novel systolic architectures, and systolic-friendly algorithms.

Cross-layer solution to thwart side-channel attacks.
- Cross-layer solution, which configures the microarchitecture dynamically, to prevent side-channel attacks on secure applications.

Projects/Internships

May-Jul 2018, Mar-May 2019	**Cache coherence protocol for Shakti C-Class processor under Prof. Kamakoti**. - Shakti is an open source hardware initiative of IIT Madras based on **RISC-V ISA**. - Implemented and verified snoop-based and directory-based MOESI protocol for multicore C-class processor.
Oct 2018 - Feb 2019	**Weight Sharing on CNNs**. Course project to perform efficient convolution operation on GPUs by leveraging weight sharing schemes under Dr. Pratyush Kumar as a part of GPU Programming course.
May-Jul 2017	**Internship - Project on Automated Model Generation at Quiklo, fin-tech company**. - Built **APIs** for generating balance sheets from bank statements using **Jetty Server** setup. - Used **Google Cloud Vision API** to extract text from image.

Scholastic Achievements

2019	**Embedded Security Challenge, Cyber Security Awareness Week**[1]. Finalist in Embedded Security Challenge, CSAW organised by NYU Tandon School of Engineering
2018	**Inter-IIT Tech Meet 2018**. Secured 3rd place in Coding Hackathon across teams from 23 IITs, held at IIT Bombay
2015	**Joint Entrance Examination(JEE)**. Secured All-India-Rank 488 in JEE Advanced 2015 and All-India-Rank 250 in JEE Main 2015.
2013,14	**Kishore Vaigyanik Protsahan Yojana**. - Science talent search program conducted by IISc, Bengaluru - Selected for fellowship twice in 2013 (Rank 178) and 2014 (Rank 530).
2013	**NTSE**. Selected for fellowship under "National Talent Search Examination", conducted by NCERT.

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[1]Finals to be held on 7 November 2019

Relevant Coursework   (* - Ongoing)

- Parallel Computer Architecture
- GPU Programming
- Concurrent Programming
- Program Analysis
- Secure Systems Engineering
- Computer Architecture
- Deep Learning*
- CAD for VLSI Design

Skills

Languages	C (OpenMP and MPI), C++, CUDA, Python (PyTorch), Java, x86 Assembly Language
HDL	Bluespec
Web Dev.	HTML, CSS, JavaScript(AngularJS and NodeJS), MEAN Stack
Tools	MySQL, MongoDB, Git(DVCS), LaTeX, Bash Scripting

Professional Experince / Positions of Responsibility

Jul-Nov 2019	**Graduate Teaching Assistant** for Fundamentals of Computer Systems Design course, which covers Nand2Tetris course, for 2nd year CS undergrads
2017-18	**Webops Core** of Shaastra 2018 - managed a team of 20 members in building and maintaining website, mobile app and technical requirements of Shaastra 2018 - annual technical festival of IIT Madras.
2016-17	Organised **Python Workshop** and **Web Development Workshop** at Shaastra 2017 and 2018 respectively, which had 200 and 600 attendees.
2016-17	**Mobops coordinator** of Shaastra 2017, worked in developing Android app for the technical festival.