

Radhika Ghosal

www.kharghoshal.xyz · radhika15160@iiitd.ac.in

EDUCATION

AUGUST 2018 **Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi)**
Graduating MAY 2019 7th Semester, B.Tech. - **Computer Science and Engineering**
GPA: 7.83/10.0, GRE: 327/340 (167Q, 160V)
Relevant Coursework Computer Graphics, Program Analysis, Embedded Logic Design, Computer Organization
Linear Algebra, Wearables, Theory of Computation, GPU Computing, Game Development

WORK EXPERIENCE

MAY 2018 **Microsoft Research, Redmond**
– Summer Research Intern, Computer Architecture Group

AUGUST 2018

- Built a modified instruction cache for Microsoft's FPGA-based Deep Neural Network accelerator.
- Resulted in speedups of upto 4.5x (on VGGNet), with an average speedup of 2.7x across VGGNet, ResNet-50, LSTM, and a generic convolution kernel.
- First undergraduate intern to work on [Project Catapult](#), led by [Doug Burger](#).
Mentors: [Ming Liu](#), [Steve Reinhardt](#)

AUGUST 2017 **IIIT-Delhi**
– DECEMBER 2017 *Teaching Assistant, Computer Organization*

MAY 2017 **École Polytechnique Fédérale de Lausanne (EPFL)**
– Summer Research Intern, Processor Architecture Lab (LAP)

AUGUST 2017

- One of the 50 selected out of 2000+ applicants worldwide, via [Summer@EPFL](#).
- Implemented a new High-level Synthesis (HLS) technique in LLVM for generating efficient hardware designs from high-level languages (C/C++/OpenCL).
Advisers: [Paolo Ienne](#), Lana Josipovic

AUGUST 2016 **IIIT-Delhi**
– Undergraduate Research Assistant

CURRENT

- Working on a toolkit for pneumatically-actuated soft robots for play.
Adviser: [Aman Parnami](#)
- Worked on compiler optimizations for embedded systems; wrote transformation passes for LLVM for the AVR architecture, optimizing for power consumption.
Advisers: [Rahul Purandare](#), [Alexander Fell](#)

JULY 2016 **MIT Media Lab – LV Prasad Eye Institute, Hyderabad**
Engineering the Eye 2016, Hyderabad, India

- Contributed to the [Open Indirect Ophthalmoscope \(OIO\)](#) project, led by [Ramesh Raskar](#).
- Added hardware support for taking medical-grade images in the dark; auto-focus and capture capabilities in IR light by detecting macular networks within a bounding box.

JULY 2015 **GVC Systems, Noida**
Embedded Systems Intern

- Worked on a voice-controlled vending machine commissioned by Star TV, a popular Indian television network, to publicize [a national sports league](#); deployed in Mumbai metro stations.

PUBLICATIONS

- Lana Josipovic, **Radhika Ghosal**, Paolo Ienne; "Dynamically Scheduled High-level Synthesis". *FPGA 2018*: 127-136

PROJECTS

NOVEMBER 2017 **Vastara** A modular wearables system, consisting of sensors and output modules embedded in cloth patches.

NOVEMBER 2016 **armsimc & armcpu** An ARM simulator in C, and a baby ARM CPU in Verilog.
APRIL 2016 **Mapbots** Mapped rooms using a ring of ultrasonic sensors mounted on a small robot. Map-generation implemented using the Hough Transform and Kalman Filters.

JULY 2015 **Algosaurus** Started a blog to address the need for quality, approachable resources on algorithms. Has received many compliments for its art.
(Went viral on [Reddit](#), has received over 100,000 unique visitors till date)

RECOGNITION

JUNE 2012 Was one of the youngest people to complete MIT's first MOOC offered, [6.002x](#), Circuits and Electronics. Was featured in various international newspapers like the [Die Zeit](#), [The Telegraph](#), and other [popular publications](#).