

Radhika Ghosal

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EDUCATION

JANUARY 2018 **Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi)**
Graduating MAY 2019 6th Semester, B.Tech - **Computer Science and Engineering**
GPA: 7.83/10.0
Relevant Coursework Computer Graphics, Program Analysis, Embedded Logic Design, Computer Organization
Linear Algebra, Wearables, Theory of Computation, GPU Computing

WORK EXPERIENCE

SUMMER 2018 **Microsoft Research, Redmond**
Summer Research Intern, Computer Architecture Group

- Building a modified instruction cache for Microsoft's FPGA-based Deep Neural Network accelerator.
- First undergraduate intern to work on [Project Catapult](#).

Mentor: Ming Liu

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: [Dr. Paolo Ienne](#), Lana Josipovic

AUGUST 2016 **IIIT-Delhi**
— *Undergraduate Student Researcher, Program Analysis Group*

DECEMBER 2017

- Working on compiler optimizations for embedded systems; writing transformation passes for LLVM for the AVR architecture, optimizing for power consumption.

Advisers: [Dr. Rahul Purandare](#), [Dr. 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 Prof. Ramesh Raskar, MIT.
- 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"
Appeared as a full paper in the *Proceedings of the 2018 ACM/SIGDA International Symposium on Field-Programmable Gate Arrays (FPGA)*, Monterey, CA, USA, February 2018.

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)

SKILLS

HARDWARE: Verilog, VHDL, Rapid Prototyping, PCB Designing
SOFTWARE: C, Python, C++, Git, LLVM, OpenGL, Django, GDB
PLATFORMS: Arduino/AVR, x86, ARM, 8051, MSP430, Raspberry Pi

LANGUAGES

FLUENT: English, Hindi, Bengali
BASIC: French

HONOURS AND 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](#).