Radhika Ghosal

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

Education

October 2017	**Indraprastha Institute of Information Technology, Delhi** (IIIT-Delhi)
Graduating May 2019	5th Semester, B.Tech - **Computer Science and Engineering**
	GPA: 7.75/10.0
Relevant Coursework	Computer Graphics, Program Analysis, Embedded Logic Design, Computer Organization Linear Algebra, Wearables, Theory of Computation, GPU Computing (6th semester)

Work Experience

August 2017 – Current
IIIT-Delhi
Teaching Assistant, Computer Organization

May 2017 – August 2017
École Polytechnique Fédérale de Lausanne (EPFL)
Summer Research Intern, Processor Architecture Lab (LAP)
- 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 – Current
IIIT-Delhi
Undergraduate Student Researcher, Program Analysis Group
- 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 Opthalmoscope (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 as an interactive user experience to publicize a national sports league. The same was deployed in Mumbai metro stations.

Honours and Recognition

December 2014 — Selected for the INOI, the second stage of the Indian team selections for the International Olympiad in Informatics.

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.

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

English:	Fluent
Hindi:	Fluent
Bengali:	Fluent

Projects

October 2017	**Vastara**	A work-in-progress 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)

Publications

- Lana Josipovic, **Radhika Ghosal**, Paolo Ienne; "Dynamically Scheduled High-level Synthesis"
  Accepted 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.