

Ajay Brahmakshatriya

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Research Fellow
Systems and Programming Languages Group
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Education

August'12-June'16	B.Tech in Computer Science(Honors), Indian Institute of Technology Hyderabad	9.74/10
	Runner up to the President's Gold medal including all departments of BTech 2016	
July'11-June'12	J.H. Ambani School, Central Board for Secondary Education	94.0%
July'09-June'10	J.H. Ambani School, Central Board for Secondary Education	95.8%

Interests

Programming languages, Compiler and Systems research

Publications

PLDI'18	An Instrumenting Compiler for Enforcing Confidentiality in Low-Level Code (<i>Under submission</i>)
GLOBECOM'16	LWIR: LTE-WLAN Integration at RLC Layer with Virtual WLAN Scheduler for Efficient Aggregation (<i>Accepted</i>)

Work Experience

July'16-Present	Research Fellow, Microsoft Research India, Bangalore
May'15-July'15	Intern, Software Development Engineer, Amazon India, Bangalore

Major Projects

July'16-Present Advisor	An Instrumenting Compiler for Enforcing Confidentiality in Low-Level Code Dr. Akash Lal, Senior Researcher, MSR India Memory partitioning and instrumentation techniques for preventing leak of confidential data in low level languages in presence of active attackers.
August'15-January'16 Advisor	LWIR: LTE-WLAN Integration at RLC Layer with Virtual WLAN Scheduler for Efficient Aggregation Dr. Bheemarjuna Reddy Tamma, Professor, CSE department, IIT Hyderabad Tunneling LTE RLC frames over WiFi channel for increased throughput with a scheduling algorithm that reduced waiting time and out of order delivery
January'16-August'16 Advisor	Efficient code generation for stencil computations on spherical domains Dr. Ramakrishna Upadrasta, Professor, CSE department, IIT Hyderabad Efficient strategies for smashing a thin spherical domain with large number of points to minimize memory utilization and execution time. Execution tiled appropriately in space and time to minimize cache misses.
August'14-January'15 Advisor	X86 compiler for the language COOL (a subset of Java) Dr. Ramakrishna Upadrasta, Professor, CSE department, IIT Hyderabad

August'14-January'15
Advisor

Enhancements to Minx OS

Dr. Bheemarjuna Reddy Tamma, Professor, CSE department, IIT Hyderabad
Modifications to Minix operating system to implement 2 new schedulers

Skill Set

Programming	X86/64 Assembly, C, C++
Tools	LLVM, Visual Studio, Git
Scripting	Python, Bash, Batch
Compiler-tools	Flex, Yacc

Some of my projects are hosted at <https://github.com/AjayBrahmakshatriya>

Academic Achievements and Experiences

- Runner up to the President's Gold medal including all departments of BTech 2016.
- Awarded the academic excellence award for 2014, 2016 during BTech.
- Teaching assistant for 3 Semester for Principles of Programming Languages and Compilers courses.
- Secured 1863 Rank in IIT-JEE, 2012 out of 500,000 students who appeared for the test

Extra-Curriculars

- Winner of Microsoft CTF competitions - Hackon(Winner) and Build the shield(Runner up)
- Creatives core for Elan 2015 and Web Coordinator for Elan 2014, the Cultural and Technical festival of IIT Hyderabad.
- Core member of KLUDGE and INFERO, the hacking and programming clubs of IIT Hyderabad for the year 2013-2014.

Hobby Projects

- emu-NES - An X64 emulator for Nintendo Entertainment System with dynamic code generation with efficient PPU rendering.
<https://github.com/AjayBrahmakshatriya/emu-NES>

Key Courses Undertaken

Compilers	Advanced Compiler Optimization	Operating Systems	Advanced Operating Systems
Computer Architecture	Computer Networks	Topics in Advanced Networking	Machine Learning