

Aftab Hussain

Computer Science Researcher and PhD Candidate
University of California, Irvine

Education

PhD in Computer Science `15 - `20 (*expected*)
University of California, Irvine
MS in Software Engineering `13 - `15
University of California, Irvine
MS in Computer Science and Engineering `10 - `12
Bangladesh University of Engineering and Technology (BUET)
BTech in Computer Science and Engineering `05 - `09
Institute of Engineering and Management Kolkata India

Experience

Graduate Researcher SEP `13 - present
University of California, Irvine

- > **IDL Development for Linux Kernel Security** SEP `17 - now
Designing an interface description language and building a **compiler** for it in **C++** that generates code to isolate subsystems in Linux and other large systems.
- > **Graspan - Big Code Analysis Project** JUL `15 - JUL `17
Built a graph processing system in **Java** for analyzing **millions of lines of code**. Graspan found **85 bugs** in Linux kernel in a few hours.
- > **Big Code Mining Project** SEP `13 - FEB `15
Compiled 300,000+ Stack Overflow Java snippets. Used heuristics to improve their parse rate from **6.22%** to **19.24%**.
- > **Search Optimization** JAN `14 - MAR `14
Developed a search engine in **Java**. Improved basic search engine's results by **92.8%** by relevance.

Teaching Assistant JAN `14 - present
University of California, Irvine

- > **Operating Systems Course CS238P** Fall `18
Taught students internals of the MIT UNIX-based OS, xv6.
- > **Compilers Course CS142** Winter `17, Winter `18
Guided 70 students in implementing all phases of Crux compiler in **Java**. Built autograder for evaluating compiler.

Research Associate DEC `12 - AUG `13
Bangladesh University of Engineering and Technology
Research Assistant SEP `10 - JUN `11
Bangladesh University of Engineering and Technology
Software Engineering Intern MAR `10 - APR `10
NextTel Communication, Dhaka

MS Thesis (BUET)

Visual Code Refactoring - Developed a code clustering algorithm in **Java** that improves refactoring visualization by at least **30%** over 3 widely popular clustering algorithms, is **1.6x faster**, and **yields the same code quality improvements**.

Contact

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<https://aftabhussain.github.io>

Interests

Language and Compiler Design, Operating Systems, Security, Scaling Program Analysis, Graph Processing Systems

Skills

Technology

Java, C++, Latex	Good
C, Python, SQL, C#	Competent
VB.Net, R, Lisp	Familiar

Spoken Languages

English, Bengali, French, Arabic, Hindi

Communication

Presentation, Team leading

Honours

Professional Activities Grant
ACM '17

Travel Award
Research Competition ACM, '16

Chair's Award
Department of Informatics, UCI, '13
Associated System Engineer Offer
IBM-India, '09

Publications*

Graspan
International Conference on Architectural Support for Programming Languages and Operating Systems, 2017 Xi'an, China
From query to usable code
International Conference on Mining Software Repositories, 2016 Austin, Texas
A new clustering technique for restructuring code
India Software Engineering Conference, 2013, New Delhi, India
** Shortened names of papers*

Service

Artifact Evaluation Committee Member
International Symposium on Software Testing and Analysis, Amsterdam, '18 & Santa Barbara, '17