Aftab Hussain

Computer Science Researcher and PhD Candidate
University of California, Irvine

Contact

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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

Interests

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

Skills

Technology

Java, C++, Latex, Vim, Git, Linux   *Good*
C, Python, SQL, C#, GDB   *Competent*
VB.Net, R, Lisp   *Familiar*

Spoken Languages

English, Bengali, French, Arabic, Hindi

Communication

Presentation, Team leading

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

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

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**.