

MUHAMMAD IHSANULHAQ SARFRAZ

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FULL STACK DEVELOPER

Innovative engineering professional with five years of experience in full stack development. Partners with developers to drive quality throughout all phases of software development to create user-friendly, bug-free projects. Participant in all phases of SDK construction process from concept to end-product. Working with an established team of developers and interact with product managers, marketing teams and designers. Genuine interest in all software technology. Experienced in using visual and statistical analysis, supervised and unsupervised machine learning algorithms, and big data technology. R&D in information security and privacy in cloud and distributed domains. US Permanent Legal Resident.

Core Competencies

Front & Back-End Development | Java Application Development |
Software Development Life Cycle (SDLC) | Data Science | Information Security

TECHNICAL SKILLS

MEAN.io | JavaScript | Dojo | AngularJS | JSP | C# | Java/J2EE | Git | PostgreSQL | Citus | OpenSSL | MongoDB | Spring | MVC | Maven | SOAP/RESTful | JQuery | Linux | Shell Scripting | WordPress | Python | Hadoop | Spark | Vertica

EDUCATION & TRAINING

Ph.D., Electrical and Computer Engineering, Purdue University, In Progress
M.Sc., Electrical and Computer Engineering, Purdue University, 2012
B.Sc., Computer Science, King Fahd University of Petroleum and Minerals, 2009
Data Science, NYC Data Science Academy, In Progress
Linux in the Real World & Shell Scripting, Linux Training Academy, 2018

PROJECTS

GAP (2016): Developed full-stack online survey platform using the MEAN stack to create and disseminate surveys. Supported analytics engine to process survey responses and provide visual representation of results. Participated in all phases of SDK construction process from concept to end-product (MEAN.io).

Sapelo Square (2018): Collaborated with contributors to plan, create, edit, and publish content for website; maintain functionality; and add to format look, feel, and accessibility including mobile platforms (CSS, Wordpress).

CRIS (2015): Designed full-stack application to build an automated web-based access control solution to prevent unauthorized access to sensitive data for web-based solution. Use large datasets of scientific domain by composing operational steps from series of web pages and computational tools designed to mimic operational processes of researcher (Java, Spring, JavaScript, Dojo, MongoDB).

iPM (2017): Worked on full-stack system that allows data owner to define access constraints and compose privacy policy to enable sharing of multimedia data securely and privately (C#, ASP).

PROFESSIONAL EXPERIENCE

PURDUE UNIVERSITY, West Lafayette, IN | 2012—Present

Full Stack Web Developer

Built scalable multi-domain security system, SPDD, that facilitates large-scale integration, mining, and analysis of multimedia data (Java, JavaScript). Led PRIME project that analyzed online learners data (~30k users) from massive open online course (MOOC) platform (R, RStudio).

- Worked with team of seven to 10 developers to design fully automated web-based access control solution to collect, analyze, and visualize data using Java, JavaScript, and Spring Framework and allow secure data sharing. Currently utilized by several clients.
- Developed online survey platform for competency assessment with highly customizable surveys using MEAN stack. Initial target personnel includes personnel selection, training, and professional development.
- Found significant patterns from MOOC platform using clustering techniques & regression analysis that allowed understanding and improvement of learner experiences, logistical challenges & behaviors, and factors affecting learner engagement, retention, motivation, & attrition.

HEWLETT PACKARD ENTERPRISE (HPE), Sunnyvale, CA | 2017

Software Engineering Intern

Utilized ArcSight System that proactively hunts and defeats unknown threats and decreases impact of security incidents. Designed secure protocol for analytics on underlying network data that preserves format and prefixes of IP addresses while also providing support for varying level of access control (C++, Vertica, JSP, JavaScript).

- Designed security mechanism for ArcSight Investigate to allow data encryption while allowing system to query and analyze encrypted data. Significant gains in privacy while incurring only modest overhead of 1.8x-2.4x.
- Provided support for user interface to visualize data for identifying patterns, anomalies, and relationship between events. UI allowed viewing of key metrics at a glance and continuously monitored investigations in progress.

HEWLETT PACKARD ENTERPRISE (HPE), Palo Alto, CA | 2016

Software Engineering Intern

Worked on secure and private processing of large datasets using HPE Distributed Mesh Computing (DMC) solution for IoT traffic, alternative that lies at intersection of Big Data and IoT where devices can collaboratively use analytics to solve new business problems without having raw data leave device. Yielded solution centered on encryption that imposed modest overhead. (C++, PostgreSQL, Citus).

- Designed DMC security solution critical for sensitive data residing on edge nodes in C++. Based on encryption supporting analytics on data without need to decrypt first & never shares encryption keys with untrusted entities.
- Evaluated performance and functionality of encrypted database with results showing solution useable with overhead of 25-35%.

ERICSSON, Riyadh, KSA | 2009

Software Engineering Intern

SELECT PUBLICATIONS

Encryption of Network Traffic Traces, 2017, Patent Pending

DBMask: Fine-Grained Access Control on Encrypted Relational Databases, Outstanding Paper Award

Distributed Access Control Architecture for Cloud Computing, 2012, 136 cites in Google Scholar as of 07/07/2018