

# Mohamed Abdulla K

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## SUMMARY

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Almost 2 years of professional experience as a Full-Stack Software Developer with research exposure | Handled production infrastructure | Integrated open-source software and 3<sup>rd</sup> party API | Developed automation scripts and participated in API design | Validated the quality of the software using automated testing.

## TECHNICAL SKILLS

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- **Languages:** PHP, Python, Bash, Javascript, C/C++, SQL, Java, HTML, CSS
- CakePHP, Cloud Infrastructure, Docker, Distributed Systems, Git, CI/CD, Linux, Memcached, MVC, PHPUnit, Redis

## EXPERIENCE

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- **RADS Lab, Carleton University** Ottawa, Canada  
*Research & Teaching Assistant* Sept 2018 - Sept 2020
  - **Thesis:** Devised a graph-based indexing technique for large scale textual documents to process Boolean queries efficiently.
  - **Research Tools:** Used **Linux**, **PHP**, and **Bash script**, and **Supercomputer cluster** to completely automate the experimental procedures.
  - **Research Outcome:** The proposed indexing technique shows on an average 63.67% better Boolean query search latency than **Elasticsearch** for different use cases.
  - **Teaching Experience:** Taught UML, Operating Systems, Design Patterns and Real Time Concurrent Systems to undergraduate students.
- **Jaze Networks** Chennai, India  
*Software Engineer* Dec 2015 - July 2017
  - **Database Scaling:** Involved in sharding **MySQL** database for load distribution | Used **PostgreSQL** as a billing database | Integrated **Elasticsearch** with shard routing for efficient indexing and search operation.
  - **API:** Integrated various 3<sup>rd</sup> party SMS, E-mail, and payment API with the automated failure recovery for reliability and fault tolerance.
  - **Handling Long Tasks:** Used **RabbitMQ** to maintain persistence of the intensive tasks such as bulk Email and SMS delivery, and long report generation.
  - **Site Infrastructure:** Migrated application from **AWS** to our own server infrastructure | Configured **Nginx** with load balancing and **Naxsi rules** | Configured a local CDN server and **vsftpd** as an FTP server.
  - **Logging, Monitoring & Visualization:** Used **Syslog** to collect logs and used **Bash** scripting to process the logs | Configured **Nagios** to monitor different servers in the production environment | Integrated **MRTG-RRD** to visualize near real time data | Used **Node.js** to show notifications about router status and user requests.
  - **Scripting (Bash and PHP):** Developed a 100% automated backup and restore system. Encrypted the backup using **OpenSSL**. Exported the backups to Google Drives and remote servers | Implemented “Restore to Factory Defaults” feature | Safe deletion of billing data with database rollback to maintain integrity.

## EDUCATION

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- **Carleton University** Ottawa, Canada  
*Master of Applied Science in Electrical and Computer Engineering* Sept. 2017 – Sept 2020
- **Anna University** Chennai, India  
*Bachelor of Computer Science and Engineering* Aug. 2011 – May. 2015

## PROJECTS & PUBLICATION

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- **Server Inventory Management System (SIMS):** SIMS is a inventory management service for maintaining the records of servers. SIMS is implemented using **PHP** in a **Service Oriented Architecture** style and uses **JSON Web Token** and **OpenSSL** for security. [click here to access the code.](#)
- **Access Control:** Developed a UML model for access control system based on real time for safe vaults. [click here to access the report.](#)
- **Graph-based Index:** A. K. Mohideen, S. Majumdar, M. St-Hilaire and Ali. El-Haraki, “A Graph-Based Indexing Technique to Enhance the Performance of Boolean AND Queries in Big Data Systems”.