# Abdullah Ashfaq

Python, MySQL, C/C++, R, JavaScript

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## EDUCATION

**University of California, San Diego** — **Expected Graduation: June 2025**
Master of Science in Data Science

**National University of Sciences and Technology (NUST)** — **Sept 2015 – June 2020**
Bachelor of Electrical Engineering – CGPA: 3.99/4 – Rank 2nd

## EXPERIENCE

**Software Engineer (Data)** – Professional Services Team — **Jan 2022 – Sept 2023**
*Totogi, US* — Used: Python, Flask, GraphQL, AWS, Docker, Kubernetes, Linux

- Accelerated data migration by 30x by designing a Python ETL tool and migrated over 50 clients using it
- Deployed Meta's open-source Magma Core on AWS using Kubernetes, Terraform and Docker and integrated with Totogi OCS
- Saved the company USD 3M by upgrading a legacy software (C/C++) to newer kernel version with little supervision
- Facilitated demos and internal teams by designing, implementing, testing and documenting new tools and services
- Automated monitoring and testing of Totogi open-source API by creating custom Python tools
- Delivered challenging projects out of my comfort zone while learning new technologies (AWS, serverless, Flask, Docker)

**Data Scientist** – Artificial Intelligence (AI) Production — **July 2020 – Jan 2022**
*Afiniti, US* — Used: Python, R, MySQL, Bayesian & Statistical Modeling

- Increased revenue up to 4% for clients in different sectors (telecom, banking, etc.) through customer segmentation, churn and LTV prediction ensuring a personalized treatment to their customers in contact-centers
- Designed metrics custom to client's line-of-business to optimize revenue
- Ensured data integrity and fault detection via automation decreasing downtime by 80% and saving AI team's time by 30%
- Analyzed Terabytes of complex data to identify optimization opportunities and drive strategy towards a vision
- Utilized statistical tests (A/B, power, hypothesis testing) for impact quantification with confidence intervals
- Assumed ownership of clients and projects by reviewing and approving data pipelines and models prior to deployment
- Collaborated with cross-functional teams to identify business issues and communicated complex analyses and insights

**Research Intern** – Processor Architecture Lab — **June 2019 – Sept 2019**
*EPFL, Switzerland* — Used: C++, Verilog, Python, Linux

- Alpha-tester for Dynamatic, an open-source dynamically scheduled high-level synthesis tool
- Investigated the shortcomings of the tool and proposed workarounds after in-depth analyses and experimentation
- Worked with Lana Josipovic (Google Fellow, ETH Zurich) and Andrea Guerrieri on benchmarking and debugging the tool

**Research Intern** – Machine Learning and AI — **June 2017 - June 2019**
*TUKL-NUST Research and Development Center* — Used: Vivado HLS/C++, Python, Pytorch, Heterogeneous Comp., Linux

- Developed open-source library to create custom DL hardware architecture achieving 3.36x speedup on FPGA over Intel-i7
- Restructured algorithms in deep neural networks to achieve Hardware-Software co-optimization
- Implemented the algorithm for binarization using integral image on FPGA

## SKILLS

**Certifications**: AWS Cloud Practitioner, AWS Solutions Architect Associate | **Databases**: MySQL, Greenplum, Athena, GraphQL
**Tools**: Airflow, Machine Learning (Pytorch, Tensorflow, Keras, Scikit-Learn), Pandas, Numpy, Heterogeneous Comp., PySpark
**ML Algorithms**: Regression (Logistic, Polynomial, Ridge/Lasso), Classification (Logistic, XGBoost, Decision Tree, Random Forest, SVM), Clustering, Bagging, Boosting, Autoencoders, CNN, DNN, RNN, LSTM
**Data Science Problems**: Customer Segmentation, Churn Prediction, Uplift Modelling (incremental effect)
**DevOps**: Docker, Git, Kubernetes, Shell Script | **Other.** Communication, Leadership, Teamwork, Critical-thinking, Problem-solving

## LEADERSHIP AND ACHIEVEMENTS

**Afiniti** — **2020 – 2022**

- Led a team of 8 professionals comprising of data scientists, analysts and engineers to deliver revenue gain of up to 4%.
- Fostered innovation and continuous improvement in my team to ensure growth and personally coached struggling members

**Summer@EPFL Internship Program** (*Acceptance Rate ≈ 1%*) — **June 2019 – Sept 2019**
**CERN Openlab Internship Program – 2x** (*Acceptance Rate ≈ 7.5%; Passed*) — **June 2019 – Sept 2019**
**US Dept. of State Global UGRAD Exchange Scholarship** *(Acceptance Rate ≈ 2%)* — **Jan 2018 – May 2018**
**Merit Scholarship for all semesters** *(Top 3 in Batch)* — **2015 – 2020**
**Gold Medal – High School – National level Exam** (1st among 12,000 students) — **June 2015**