Abdullah Ashfaq

Personal Information

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Education

Masters of Science in Data Science — 2025

Halicioglu Data Science Institute (HDSI), UC San Diego

Bachelor of Electrical Engineering — 2020
Knowledge Area - Computer Engineering

SEECS, National University of Sciences and Technology (NUST), Islamabad, Pakistan
- CGPA - 3.99/4.0
- 2nd Rank in a Batch of over 150
- NUST ranked 1st in Pakistan by QS in Electrical Engineering and Computer Sciences

Pre-Engineering - High School — 2015

Overseas Pakistanis Foundation, Islamabad, Pakistan
- Percentage - 93%
- Secured 1st rank among 12,000 students

Research Experience and Projects

Research Intern for Machine Learning and AI — 2017 - 2019

TUKL-NUST Research and Development Center ❏

- **ML on Chip (Capstone Project)**   **Tools :** Vivado HLS (C++), Python, Pytorch
  — Simulated bit-accurate hardware design in Python and then wrote it in C++ to be translated to HDL using Vivado HLS
  — Identified bottlenecks in performance and tried different micro-architectures to avoid them
  — Achieved timing, power, area and latency requirements
  — Interfaced IP with bare metal application and debugged hardware using logic analyzer
  — Achieved 3.36x times speedup on PYNQ-Z1 board over Intel-i7 CPU with negligible accuracy loss

- **Computer Vision Algorithms on FPGAs (Personal Project)**   **Tools :** Vivado-HLS
  — Implemented the algorithm for image binarization using integral image on FPGA

Summer Research Intern — June 2019 - September 2019

Processor Architecture Lab (LAP) , EPFL ❏

- 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 under the supervision of Dr. Paolo Ienne with Lana Josipovic (Google Fellow, Assistant Professor ETH Zurich) and Andrea Guerrieri on benchmarking and debugging the tool

Work Experience

Technical Delivery Consultant - Professional Services — Jan 2022 - Present

Totogi, US ❏   **Tools :** Python, Flask, GraphQL, AWS, Docker, Kubernetes

- Accelerated data migration by 30x by designing a Python ETL tool and migrated over 50 clients using it
- Deployed and integrated Meta's open-source Magma Core ❏ 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 and implementing tools and services. Wrote documentation
- 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

Data Scientist - Production — July 2020 - Jan 2022

Afiniti ❏ (Remote)   **Tools :** Stan, R, Python, MySQL
DS Applications : Customer Segmentation, Churn Prediction, LTV Prediction

- Created and productionized models that intelligently pair customers and agents in a call center environment based on their behaviour and delivered up to 4% revenue gain
- Designing optimizable metrics
- Automated monitoring of production environment and freed time of AI Production team by 20%
- Designed dashboards and tools using machine learning and statistics to aid in identification of common issues
- Ensured data integrity by designing automated alerts as well as visualizations
- Collaborated with cross-functional teams to identify business issues and translated business problems and insights into data science problems

SKILLS	**Programming Languages :** C, C++, Python, R, JavaScript
	Certifications : AWS Cloud Practitioner, AWS Solutions Architect
	Databases : MySQL, Greenplum, Athena, GraphQL
	DL/ML Frameworks : Pytorch, Tensorflow, Caffe, Keras, Scikit-Learn
	DevOps Tools : Docker, Git, Kubernetes, Shell Scripting
	Worked on DS Problems : Customer Segmentation, Churn Prediction, Revenue Optimization

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LEADERSHIP EXPERIENCE

Afiniti *2021-2022*

— Successfully led AI team of 6 people comprising of data scientists, data analysts and data engineers
— Created a healthy environment conducive to innovation in my team and personally coached struggling members

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ACHIEVEMENTS AND AWARDS

Summer@EPFL Internship Program *2019*
Acquired summer internship at EPFL, Switzerland. Worked at Processor Architecture Lab (LAP) ❏ under the supervision of Professor Paolo Ienne.
Value : 5,000 USD. Acceptance Rate ≈ 1%

CERN Openlab Internship Program - 2X *2019 & 2020*
Selected for this program among 4000 applicants. Assigned to work on the project "Fast Inference on FPGAs for HEP trigger systems". PASSED
Value : 7,800 USD. Acceptance Rate ≈ 7.5%

KAIST EE Camp *2018*
Among the 12 Pakistani students selected for the camp at KAIST, South Korea. Over there, I attended seminars and meetings on the latest research trends in EE at KAIST
Value : 3,000 USD. Acceptance Rate ≈ 2%

US Dept. of State Global UGRAD Exchange Scholarship *January 2018 - May 2018*
Cultural Ambassador of Pakistan in USA. Under this program, I spent one semester at Utah State University, USA. I delivered presentations on Pakistan and completed 20 hours of community service.
Value : 33,000 USD. Acceptance Rate ≈ 2%

Merit Scholarship for all semesters *September 2015 - present*
Value : 900 USD

Fellowship Award - Passed *February 2017*
Offered a fellowship in an engineering organization after graduation and complete financial support for the duration of my degree.
Value : 9,000 USD initial, 10,000 USD Annual. Acceptance Rate ≈ 1.5%

Gold Medal *June 2015*
Secured first position from among 12,000 students in HSSC (central high school exam). Final Percentage - 93%. Scored almost 100 % in Mathematics, Physics and Chemistry. Received medal from the then **President of Pakistan, Mamnoon Hussain**.
Additional Cash Prize : 750 USD

EXTRA-CURRICULAR ACTIVITIES

Community Service
Volunteered with following organizations :
- Chaadar : *2015 - 2019*
  Teaching street children and gathering clothes and food for the underprivileged
- Best Buddies : *January 2018 - May 2018*
  Spending time with people who have intellectual and developmental disabilities
- Grand Friends *January 2018 - May 2018*
  Doing activities with elderly people at an old home

Student Organizations
Served as a member at following organizations :
- Student Government Association (SGA) : *September 2015 - September 2016*
  Facilitated collaboration between student organizations and school administration.
- Youth Entrepreneurial Society (YES) : *September 2015 - September 2016*
  Organized workshops on freelancing.