





# Adeel Ahmad

[adl1995.github.io](https://adl1995.github.io) 

## WORK EXPERIENCE

- Fellow in Authorization Team, European Organization for Nuclear Research (CERN)** **September 2020 — Present**  
Developed a permanent 2FA solution for the CERN SSO and running campaign to migrate all users. *Geneva, Switzerland*  
Doing Linux server administration for load balancing our cluster setup. Monitoring server logs with Kibana and Grafana. Extending and refactoring our C# and Python APIs.
- Technical Student in Computer Security, European Organization for Nuclear Research (CERN)** **September 2018 — October 2019**  
Wrote a Go tool to monitor anomalous SSH login activity on the CERN campus. Wrote Puppet modules *Geneva, Switzerland*  
to install and configure RPM packages. Attended conferences and met with security leaders across Switzerland.
- C++ Software Developer, Google Summer of Code 2018(Boost C++ Libraries )** **May 2018 — August 2018**  
Improved the accuracy (from  $cm$  to  $\mu m$ ) of a distance algorithm used in the aerospace industry for creating *(Remote)*  
flight plans. Benchmarked the new system to show performance and accuracy gain.
- Python Software Developer, Google Summer of Code 2017(Open Astronomy )** **May 2017 — August 2017**  
Developed a package to visualize and run analysis on astronomical images. Used asynchronous programming *(Remote)*  
to reduce fetch latency by 75%\*.





## EDUCATION

- Georgia Institute of Technology, Master's of Computer Science, GPA: 4.0/4.0** **2020 — Present**  
Specializing in Computing Systems. *(Remote)*
- National University of Computer and Emerging Sciences, Bachelor's of Computer Science, GPA: 3.01/4.0** **2014 — 2018**  
Thesis: "Analysis of Structure from Motion Techniques"  *Islamabad, Pakistan*



## COURSE PROJECTS

- Advanced Operating Systems [C, Libvirt, OpenMP]** **September 2021**  
Implemented a vCPU scheduler and a memory coordinator to dynamically manage CPU and RAM assigned to each guest machine.  
Created graph plots to analyze usage patterns. Implemented Barrier Synchronization algorithms in OpenMP and MPI.
- Robotics: AI Techniques [Python]** **January 2021**  
Implemented Kalman and Particle filters for robot location tracking. Used A\* search to find the shortest distance. Improved  
location accuracy using SLAM. Reduced motion noise using a PID controller.
- Software Analysis [C, LLVM]** **May 2021**  
Wrote LLVM passes in C to perform divide-by-zero runtime checks and report code coverage. Implemented Reaching Definition and  
Liveness analysis to find unused variables in a program.

## OPEN-SOURCE PROJECTS

- GeoLib [C++, Boost] ** — Distance computation algorithms implemented using C++ template specialization.
- Particle Swarm Optimization [C++, mpack] ** — Algorithm for constrained optimization problems using template metaprogramming.
- Edge detectors [Python] ** — Image edge detection algorithms.
- Trip Planner [Python] ** — Queries Google Maps places based on an input query and exports them to a CSV file. *(featured on HNews)*

## TRAININGS AND CONFERENCES

- A Practical Introduction to Quantum Computing ** **November 2020**  
Studied the Deutsch quantum algorithm and quantum circuit model (Qubits, gates, and measures). Introduction to D-Wave Leap.  
Interactive exercises in Jupyter notebook.
- Red Hat Linux System Administration ** **December 2020**  
Covered process, memory, and I/O monitoring, filesystems (BTRFS, VFS, LUKS), RAID and LVM, drive encryption, file ACLs, PAM,  
networking tools, firewalls, systemd, udev, bootloaders.

## FEATURED BLOG POSTS

- Passwordless Logins with Yubikey ** **February 2021**
- Trip Planner – A tool for planning a trip itinerary using Google Maps ** **October 2019**

## SKILLS

C++, Python, Java, Go, Arch Linux, Systemd, Awk, sed, Puppet, MySQL, PostgreSQL, Google Cloud Platform

## INTERESTS

Kayaking, Skiing, Traveling 