

Adeel Ahmad

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adl1995.github.io [↗](#)

Work experience

Technical Student (IT-DI-CSO) [↗](#) September 2018 - Present
European Organization for Nuclear Research (CERN) Geneva, Switzerland

- Automating the configuration and deployment of software packages using Puppet
- Processing data pipeline from Apache Kafka to develop a remote login monitoring tool
- Using Koji and GitLab CI for streamlining the build process of RPMs for installation on OpenStack containers
- Enhancing features and usability of an incident response web application system

Software Developer May 2018 - August 2018
Google Summer of Code 2018 (Boost C++ Libraries) [↗](#) (Remote)

- Improved the accuracy of geodesic algorithms for nearly antipodal points
- Generalized the implementation using C++ template parameterization
- Benchmarked the performance against existing geodesic algorithms

Software Developer May 2017 - August 2017
Google Summer of Code 2017 (Open Astronomy) [↗](#) (Remote)

- Designed and developed a Python astronomy package for Hierarchical Progressive Surveys [↗](#)
- Implemented a simple and precise drawing algorithm using projective transformation and nearest-neighbor interpolation techniques
- Wrote parametrised test cases and used Travis CI for contiguous integration

Full-Stack Web Developer January 2017 - April 2017
Upwork [↗](#) (Remote)

- Developed large-scale PHP Laravel software systems
- Created dynamic front-end interfaces using Vue.js and React

Data Scraper, Web Developer June 2016 - December 2016
Fiverr [↗](#) (Remote)

- Used Beautiful Soup and regular expressions for scraping data off websites and performed data analysis using Pandas
- Integrated Selenium with PhantomJS web-driver for headless browser automation

Skills

Programming languages: Python, Go, C++, PHP, JavaScript, Assembly (x86), Bash, \LaTeX

Cloud management: Puppet, OpenStack, GitLab CI, Amazon Web Services, Google Compute Engine

Web development / databases: Django, Laravel, React, jQuery, MySQL, SQLite, PostgreSQL, Apache

Computer vision / machine learning: OpenCV, TensorFlow, Keras, NumPy, Pandas

Projects

Reconstruct3D [↗](#)

September 2017 - May 2018

- Implemented the structure from motion pipeline using monocular images
- Applied RANSAC on SIFT keypoint matches for removing outlier points
- Visualized the result by providing a point cloud representation for the input scene

GeoLib [↗](#)

March 2018

- Implemented various algorithms for computing distance between two points on the Earth's surface
- Used C++ template specialization to allow users define their custom data types
- Set up Doxygen for source code documentation and benchmarked the implementation against Boost Geometry algorithms

Astronomy package for HiPS [↗](#)

May 2017 - August 2017

- Developed a Python package for viewing astronomical figures
- Wrote parameterized test cases and used Travis CI for contiguous integration
- Applied asynchronous programming techniques for fetching tile data

MCQ Exam Checker [↗](#)

December 2016

- Applied Gaussian blur to remove noise from the input image before applying Canny edge detection
- Performed template matching using Generalised Hough transform to find the encircled MCQ's
- Used 2D cross-correlation for character identification inside the identified MCQ option

Peer-reviewed journals

A. Ahmad, C. Deil, T. Boch, B. Sipocz, A. Donath; "A Python astronomy package for HiPS: Hierarchical Progressive Surveys", Journal of Open Source Software (in progress [↗](#))

Events and conferences

Insomni'Hack

March 2019
Geneva, Switzerland

Swiss Web Security Day

October 2018
Bern, Switzerland

Interests

Kayaking, Skiing, Movies, Cooking, Reading, Travelling [↗](#)