Adeel Ahmad

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Work experience

Computer Security - Technical Student ⬈   September 2018 - Present
European Organization for Nuclear Research (CERN)   Geneva, Switzerland

- Automating the configuration and deployment of software packages using Puppet and OpenStack
- Developing a tool for real-time anomaly detection of user logins to CERN machines
- Using GitLab CI for streamlining the build process of RPMs for installation on cloud containers
- Enhancing features and usability of an incident response Django based 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)

- Developed a CLI package for visualizing astronomical images
- Improved the data fetch time by parallelizing the requests
- 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
- Developed a dynamic form builder which allowed adding custom input validation rules

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

Education

Bachelor of Computer Science   August 2014 - June 2018
National University of Computer and Emerging Sciences   Islamabad, Pakistan

- Final year project: "Analysis of Structure from Motion Techniques" ⬈

Projects

Reconstruct3D ⬈ [Python, OpenCV]   September 2017 - May 2018

Implemented the structure from motion pipeline which took monocular images as input, reconstructed their 3D point cloud representation, and visualized the output using a web interface.

Maps Parser ⬈ [Python]   May 2019

Created a script to automate the parsing of popular destinations in a city and exported them to a CSV file.

GeoLib ⬈ [C++, Boost]   March 2018

Used template specialization to implement a generalized version of distance computation algorithms and benchmarked their implementation against Boost Geometry.

MCQ Exam Checker ⬈ [Python, NumPy]   December 2016

Automated the process of checking a multiple-choice question based exam sheet. It involved creating a binary image of the input and then matching the selected option using template matching and 2D cross-correlation.

Distributed Searching ⬈ [Go]   January 2018

Designed a leader-follower architecture for implementing a distributed searching algorithm and balanced the workload equally among all available processes.

Self-Driving Car Agent [Python]   December 2017

Trained a bot on TORCS racing simulator using reinforcement learning with convolutional neural networks taking the pixel space as input and employing an actor-critic policy to maximise the reward

Events and conferences

Thematic CERN School of Computing ⬈   May 2019

An annual school based on the topic of high throughput distributed processing. It involved lectures on vectorization, optimization, and effective I/O for scientific applications.   Split, Croatia

Insomni'Hack ⬈   March 2019

A security-based conference which involved talks on hardware and software level exploits and a capture-the-flag event.   Geneva, Switzerland

Swiss Web Security Day ⬈   October 2018

A platform to bring together individuals from technology, business, politics, research and public sector on the global topic of cyber security.   Bern, Switzerland

Interests

Kayaking, Skiing, Cooking, Reading, Movies, Traveling ⬈