Bibek Dahal

Software Developer

https://www.linkedin.com/in/bibek-dahal
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Python, Javascript, C++, Typescript, Java, C#, SQL
Numpy, Pandas, Scikit-learn, Dask, Xarray
React, VueJS, React Native, Jquery
D3, Mapbox, Cesium
OpenGL, WebGL, Unity, Shaders
Serverless, Terraform, AWS
Athena, S3, Step Functions, Lambda, Fargate, RDS

Education

2019 - Present
United States

The University of Alabama in Huntsville
Masters of Science in Computer Science

Graduate Research Assistant
GPA: 4.0

2012 – 2016
Nepal

Institute of Engineering, Tribhuvan University
Bachelor of Engineering in Computer Science

Full Merit Based Undergraduate Scholarship
First Division with 79.35%

Experience

Global Hydrology Resource Center
Graduate Research Assistant
The University of Alabama in Huntsville

Jan 2019 - Present
United States

VISAGE

A Visualization and Exploration Framework for Environmental Data.

Developed a serverless backend for AWS.

Implemented a 3D visualization system.

Athena, S3, Step Functions, Lambda Functions, Fargate, RDS, Cesium. Potree, Pandas, Numpy, Python, NodeJS, Serverless

FCX

Field Campaign Explorer

Designed a parallel cloud architecture for rendering very large datasets as 3D point clouds, attaining a system that is up to 10 times faster than existing non-parallel systems.

Optimized cloud-based point cloud rendering for 3D data.

ECS Cluster, S3, RDS, Cesium, Dask, Xarray, Zarr, Terraform, Python

Togglecorp
Co-Founder and Software Engineer

Oct 2016 - Jan 2019
Nepal

DEEP

A semi-automated data analysis and visualization tool developed for the humanitarian community, funded by various UN agencies, the IFRC, and other INGOs.

Django, React, D3, Mapbox, PostgreSQL, Docker

Various Data Analysis and Visualization Tools

Worked as both backend and frontend developers in building tools for various NGOs, INGOs including IDMC, ACLED, People in Need and World Vision.

React, VueJS, React Native, D3, Jquery, Leaflet, Mapbox, TensorFlow, scikit-learn, AWS

Academic Projects

Real-Time Large Crowd Rendering in Unity using Parallel LOD Technique

Independent Study during Master's study
Supervisor: *Dr. Chao Peng*

- Support for an enormous amount of 3D instances with distinct animated 3D models.
- GPU Programming using Compute Shaders.
- LOD and Frustum Culling techniques to achieve high performance.

Unity, Compute Shaders, C#, GPU Programming

2D to 3D Conversion

Bachelor's Senior Research Project
Supervisor: *Dr. Jyoti Tandukar*

- Partial 3D reconstruction from a 2D image.
- Presented using Virtual Reality technology.

OpenCV, OpenGL, VR, C++, Java, Android

Blind Signal Separator

Bachelor's Junior Research Project

- Individual voice separator from a single audio file containing mixed sound signals.
- Neural network capable of running on GPU

Python, SciPy, OpenCL

Mrika Sikar - 3D Shooter Game

Bachelor's Project in Object-Oriented Programming

Awarded best academic project award by FlipKarma

- Third-person shooter game.
- Numerous features including skinned animation, shadow mapping, quad-tree based broad-phase collision, SAT collision algorithm.
- Potential Function to simulate chasing and avoiding.

OpenGL 3.3, GLSL, C++

Awards & Achievements

Yomari Code Camp, 2016

Yatra - Web application to create, share and get recommendations on travel plans.
First prize in two-day software development competition

Ncell App Camp, 2015

Flipped - 2D Platform Adventure Game for Android devices.
Finalist in Games and Entertainment section

FlipKarma Awards, 2014

Mrika Sikar - Third-person 3D shooter game.
Best academic project in Object-Oriented Programming