Kalpit Fulwariya

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Education

University of Illinois at Urbana-Champaign (USA) May 2021
B.S. in Computer Engineering *GPA: 3.10/4.00*

Courses: Deep Learning, Parallel Programming (CUDA), Computational Photography, Computer Graphics, Real-Time Systems
Professional Experience: Full Stack Web Development, Ethereum Smart Contract Development

Experience

Kaleidoscope Blockchain December 2022 – Present
Software Engineer *Bengaluru, KA, India*

- Reduced smart contract interaction time by **80%** compared to manual interaction by writing custom Go package (Go, Bash)
- Utilized Dart isolates to benchmark and optimize concurrent UDP message generation, resulting in **5% (10ms)** performance improvement
- Determined optimized input parameters through stress testing to prevent packet loss and improve bandwidth measurement by **24% (150 Mbps)**
- Created an admin dashboard website to visualize client data and logs (HTML, CSS, Javascript, AJAX)
- Developed Ethereum smart contracts in Solidity with onchain integrations
- Ported client codebase from C++ and Python to Dart, enabling cross-platform portability
- Integrated codebase with open source Electron application (filecoin-station) to enable multi-platform usage

Health Care Engineering Systems Center June 2020 – July 2020
Software Engineer Intern *Champaign, IL, USA*

- Designed and constructed VR surgery simulator quiz with interactive UI and 3D models using Oculus Integration (Unity)
- Implemented Unity script to deserialize JSON tool database using Json.NET and update UI based on tool interaction in VR using VRTK (C♯)
- Tested and recommended changes to rigged hand model; created two animations with rigged hand model (Maya)

Multimedia Operating Systems and Networking Group January 2019 – August 2019
Undergraduate Research Assistant *Urbana, IL, USA*

- Annotated bounding boxes in key frames for 360-degree videos using LabelImg to improve CNN object detection accuracy
- Initiated Android VR video player app with motion sensor tracking (Java)
- Implemented backpropagation algorithm for neural network to recognize hand-written objects (MATLAB

Projects

Type App | *Personal Project* September 2021 – October 2021

- Built a single-page web application with MongoDB database, NodeJS backend and React frontend used by 50+ users to measure typing speed for English alphabets (HTML, CSS, JavaScript)
- Implemented a NodeJS backend to handle CRUD operations to maintain user leaderboard

Numbas | *Open Source* July 2021

- Contributed and tested a weighted random math function script to an open-source math e-assessment system (Javascript)

CUDA-Optimized Fashion Image Classification CNN | *Course Project* March 2021 – May 2021

- Implemented and optimized forward pass of convolutional layers of modified LeNet-5 using CUDA
- Performed optimizations using constant memory kernels, shared memory matrix multiplication and loop unrolling to reduce the convolution layer times by up to **40%**

WebGL Project: 3D Environment | *Course Project* April 2020 – April 2020

- Built a web application to render with Phong, Reflective or Refractive shading and mapping environment texture
- Created UI for rotation and orbiting around teapot object with reflections consistent with the skybox environment (HTML, JavaScript, WebGL)

Technical Skills

Languages: C/C++, Python, JavaScript, Dart, Solidity, Go, Bash, C♯, Java
Technologies: Git, AWS, Vue, React, MongoDB, SQLiteStudio, Maya, Unity, MATLAB, Android Studio
Interests: MKBHD, Tennis, Etymology