KISHORE GANESH

Exploratory Programmer

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EXPERIENCE

MLH Fellow
MLH

📅 Sep 2020 – Dec 2020   📍 *Remote*

- Selected as one of 180 fellows from nearly 30,000 applicants
- Work together to contribute to open source under the help of an experienced mentor
- Contributing to BentoML, a tool that makes ML deployments much easier

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Software Engineer Intern
Dell

📅 June 2020 – July 2020   📍 Bangalore *Remote*, India

- Collaborated with another team to create a dashboard representation of the various systems in order to aid in debugging.

- Worked with other interns to add features to a ASP.NET / Angular based codebase that had a microservices oriented architecture.

Backend Developer Intern
SpringWorks

📅 June 2019 – July 2019   📍 Bangalore, India

- Worked on the backend team of the SpringRecruit platform.
- Involved in creating new APIs, fixing bugs, refactoring and in interacting with other API vendors like doSelect.
- Used NodeJS, Express with Mongoose and Hosting on AWS

Backend Developer Intern
Novlence Core

📅 Feb 2019 – June 2019   📍 Jaipur, India

- Worked on the APIs of an innovative lead generation platform. I was also involved in tracking down and fixing bugs and inconsistencies.
- The technology stack in use was NodeJS, ExpressJS and MongoDB for the database layer.

PROJECTS

Jack Toolchain in C++
- Following the guidelines of the Nand2Tetris book, implemented the Jack Compiler in C++.
- Implemented a two phase recursive descent Compiler with first phase converting to intermediate virtual machine code, and second phase converting to assembly.
- Wrote the assembler to translate this assembly to binary
- Implemented the Jack Hardware platform in a hardware simulator from NAND Gates, on which this code will run
- Project Link: http://github.com/kishore-ganesh/JackCompiler

NES Emulator (Ongoing)
- Implementing an emulator for the Nintendo Entertainment System from scratch using C++ and SDL
- Have implemented the CPU with over 150 opcodes
- Have implemented 3/5 Audio channels
- Have implemented the Picture Processing Unit and am able to play Donkey Kong, Super Mario Bros and more.
- Project Link: http://github.com/kishore-ganesh/NESEmulator

Path Tracer (Ongoing)
- Implementing a path tracer from scratch using Rust and glm
- Implemented materials from Disney paper and multithreading to distribute rendering work
- Implemented various primitives like Camera, Triangle, Plane, Triangle Mesh, Sphere, etc
- Render a 3D scene using Monte Carlo approximation of the rendering equation

Convolutional Neural Networks from Scratch
- As part of a team, have implemented CNNs completely from scratch in Matlab
- Evaluated on MNIST dataset, and got an accuracy of 97.58%
- Enabled us to get an indepth understanding of convolution and backpropagation
- Project Link (group): http://github.com/kishore-ganesh/CNNFromScratch/

Multiplayer web game using p5.js and Socket.IO
- Co-built a clone of the popular multiplayer game Agar.io for learning purposes.
- Used p5.js for graphics and input, ExpressJS for the server. WebSockets used for realtime player communication.
- Project Link (group): https://github.com/kishore-ganesh/mult-x

EXTRACURRICULARS

- Gave a talk where I went over different kinds of emulation and my experience having built two emulators
  Link: https://youtu.be/DwWGPswFTQc
- Gave a talk on how containers are actually implemented. Link: https://youtu.be/AE733zsPLjM
- As a mentor of Web Development, taught students Web Development from the ground up, following a project driven approach that led to one of my students winning accolades at a university hackathon
- Worked as a freelance writer for over 2 years, having worked on over 280 orders across a wide variety of domains
- Got published in India's largest technology magazine, Digit (July 2015 issue) and on an industry leading Virtual Reality website (UploadVR)
- As a member of the core commitee of E-Conclave 2019, was responsible for co-heading a team of 5 members to produce content, write Emails to distinguished personalities and write engaging blog posts in order to ramp up excitement about E-Conclave, the biggest entrepreneurship fest of our university.
- As a core-team member of our Entrepreneurial Club, was responsible for managing the content strategy of our entrepreneurship cell for the year 2019.

HONORS

- Winner of MLH Fellowship Halfway Hackathon under "Learning new skills" category
- 2nd Runner Up at Techstars Startup Weekend Jaipur
- 1st Runner Up at HERE IncubateIND Hackathon
- 1st at Stdout Wars (Intra college)

EDUCATION / COURSES

Web Development with NodeJS
Coding Blocks

📅 June 2018 – Aug 2018

Machine Learning Bootcamp - 45 hours
Forsk

📅 August 2018 – November 2018

Bachelor of Technology (Computer Science & Engineering) - 9.3 GPA
Manipal University Jaipur

📅 July 2017 – May 2021

PROJECTS (CONTINUED)

Genetic algorithms on Flappy Bird using p5.js
- Made a Flappy Bird game in p5.js and implemented a barebones neural networks library that is trained using genetic algorithms
- The Neural Network can navigate the game accurately
- Used a YouTube Channel (The Coding Train) to get the concepts cleared, but the code was our own
- Project Link (group project): https://github.com/Harshharsola/flappybirdml/

Real time chatting application
- Developed a real-time chatting application(simplestchat.herokuapp.com) for the capstone project in my Web Development Course
- Used NodeJS for handling server requests, and jQuery on the front end. Also used Socket.IO for handling real-time communication.
- Authentication done using Passport, and database operations using Sequelize
- Project Link: https://github.com/kishore-ganesh/SimpleChat

CHIP8 Emulator
- Built a simple emulator for the CHIP8 specification
- The emulator is fully functional, save for audio support, with 32 opcodes implemented
- Plays around 10-15 games released for the CHIP8
- Project Link: https://github.com/kishore-ganesh/chip8Emulator

Huffman Compressor
- For educational purposes, implemented the Huffman encoding algorithm and used it to compress files.
- Compresses the file and stores the huffman table in the file header, and has functions to decode the file.
- Project Link: https://github.com/kishore-ganesh/HuffmanCompressor

JSONParser in C++
- Built a JSONParser that can parse most JSON to learn how to write a libary
- JSON is parsed into a datatype that uses minimum storage
- Each JSONNode also has a stringify function to pretty print it

Visualization of Dijkstra's Algorithm
- Made a crude prototype using C++ and SDL that generates random nodes and edges and visualizes the execution of Dijkstra's Algorithm

Shell that supports piping and redirection
- Implemented a shell that supports piping and redirection.
- Project Link: https://github.com/kishore-ganesh/ZeroShell