Nirajan Acharya

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EDUCATION

Youngstown State University Youngstown, OH

Bachelor of Science in Computer Science | GPA: 4.00 /4.00 *Aug 2018 - Aug 2022*

President's List Award, YSU International Scholar Award

COURSEWORK & COMPUTER SKILLS

- **Programming:** C, C++, Java, Python, and JavaScript
- **Tools:** Visual Studio, NetBeans, PyCharm, JupyterLab, Atom, Unity
- **Technologies**: AWS (EC2 and RDS), Spring Boot, MySQL, PostgreSQL
- **Coursework:** Data Structures & Algorithms, Operating Systems, Advanced Object-oriented Programming
- **Frameworks:** Spring Boot, React Js

PROJECTS

Variable Length Subnetting Mask

- Simulated network connection using Variable Length Subnetting Mask (VLSM).
- Applied OSPF (Open Shortest Path First) for the purpose of routing replacing Static routing.
- Configured Dynamic Host Protocol to generate IP addresses for 300 hosts in a network.
- Optimized the use of IP addresses to each subnet by using 6 different subnet masks.

Project VDI

- Created a program that duplicates files into and out of a VirtualBox VDI file comprising a Linux ext2 filesystem.
- Designed a program, which checks the file integrity while reading and writing VDI file.
- Performed read and write operations 100% accurately without corrupting the file.

Penguin Health App

- Built a web app to serve as a daily health assessment tool using Java, Angular, and SQL.
- Developed diagnostic tools and analyzed patient data to determine the health risk associated with COVID19.

Branch Predictor

- Implemented 7 different Branch Prediction simulator algorithms to predict branch instructions.
- Leveraged Smith Predictor, Global-History Two-level Predictors, Local-History Two-level Predictors, and Gshare Predictor.

Online Shopping App

- Created an online shopping app using React Js, HTML, Thymeleaf, MySQL, and Java Spring Boot.
- Integrated AWS relational database for user authentication and authorization, as well as storage and retrieval of electronic items data.
- Employed JSON Web Token (JWT) to authenticate users and configured HTTP Security in the application.

Finite State Machine

- Programmed Finite State Machine for a non-player character with the help of randomness, depth-first search algorithm, and breadth-first search algorithm.

WORK EXPERIENCE

The Shodor Education Foundation, Inc. Durham, NC

Machine Learning Researcher *Aug 2021 - May 2022*

- Collaborated with a team of 5 members on the project "Accelerating the Inference Pipeline for Particles Track Finding".
- Improved the algorithm's execution time on 40 and 48 node CPUs.
- Reduced total wall-time by 40% using Facebook AI Similarity Search (FAISS) library, Mpi4py, SciKit Network, and Multiprocessing.