

Nirajan Acharya

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EDUCATION

Youngstown State University

Bachelor of Science in Computer Science / GPA: **4.00 /4.00**

President's List Awards, YSU International Scholar Award

Youngstown, OH

Aug 2018 - May 2022

COURSEWORK & COMPUTER SKILLS

- **Programming:** C, C++, Java, Python, and JavaScript
- **Tools:** Visual Studio, NetBeans, PyCharm, JupyterLab, Atom, Unity, Blender, Jira
- **Technologies:** AWS (EC2, RDS, S3, ELB), MySQL, Docker
- **Coursework:** Data Structures & Algorithms, Operating Systems, Advanced Object-oriented Programming
- **Frameworks:** Spring Boot, React JS, Hibernate, Log4j, Jersey, Collections, Spring Security
- **Query Languages:** SQL, HQL, JPQL
- **Testing:** JUnit, Mockito

WORK EXPERIENCE

The Shodor Education Foundation, Inc.

Machine Learning Researcher

Durham, NC

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.

Youngstown State University

Computer Science Tutor

Youngstown, OH

Aug 2020 – May 2021

- Assisted students in understanding concepts and implementations related to Data Structures and Algorithms.
- Mentored and provided learning resources to 20 students, resulting in a 35% increase in test scores and outcomes.
- Co-operated with a team of 7 tutors to conduct a competitive programming contest to improve programming skills.

PROJECTS

Penguin Health App

- Programmed a web app to serve as a daily health assessment tool using Spring Boot Java Framework, React Js and MySQL.
- Developed diagnostic tool and analyzed patient data to resolve the health risks of Coronavirus disease (COVID19).

Online Shopping App

- Created an online shopping app using React Js, HTML, Thymeleaf, Hibernate, 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.

Branch Predictor

- Implemented 7 different Branch Prediction simulator algorithms to ameliorate the flow in the instructions Pipeline.
- Leveraged Smith Predictor, Global-History Two-level Predictors, Local-History Two-level Predictors, and Gshare Predictor.

Project VDI

- Created a program that duplicates files into and out of a VirtualBox VDI file comprising a Linux ext2 filesystem.
- Designed a program that checks a file system's integrity after executing read and write operations in the VDI file.
- Performed read and write operations with 100% accuracy without corrupting the file system.