

BIRAJ SILWAL

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Experience

Software Engineer Intern, Management Sciences Inc. 📅 Sept 2021 - Present

- Collaborate with Sandia National Laboratory in a team of **4** to design and develop computer vision algorithms for unique use cases.
- Implement **OpenCV**, **YOLO**, and **MediaPipe** libraries to detect an object in real-time security camera video feed (20 frames/sec).
- Write **Python** script to find the center of gravity (blob) and predict the distance of an object.

Fullstack Developer, University of New Mexico 📅 Apr 2020 - Dec 2021

- Architected and developed a full stack web app from scratch serving **1,900+** engineering students with **11,000+** page views within 20 months.
- Technologies used: **React**, **MongoDB**, **Strapi**, **AWS**.
- Used **Agile methodology** to continuously plan, design, and program the UI/UX resulting in enhanced user satisfaction ratings from **60% to 95%**.
- Created questionnaires and conducted user interviews to identify and analyze current user experiences and pain points.

Research Intern, Purdue University 📅 Jun 2021 - July 2021

- Technologies used: **PHP**, **JavaScript**, **HTML**, **CSS**, **Git**, **AWS**.
- Collaborated with **4** team members in a Human-AI teaming experiment to implement a higher level of autonomy/automation (Level 5 to Level 8).
- Designed experiment, deployed simulation, and reported results on a 3-week timeline.

Virtual Insight Series, Goldman Sachs 📅 June 2020 - July 2020

- Received training in professional development, introduced to networking best practices, interview best practices, and exposure to the intersection of finance and technology.

Projects

Centralized Medical Examiner, Software Engineering-CS460 (coursework) 📅 Jan 2020 - Present

- Manage a project of **6** developers to build a web application from scratch for the Office of the Medical Investigator (OMI) of the state of New Mexico.
- Incorporate stakeholder's requirements and communicated with internal team to determine working solutions.
- Implement **Agile**, **Git**, and **Asana** to streamline the software development process, increase collaboration, and improve customer satisfaction.

Chili House, NASA MINDS project 📅 Nov 2020 - Present

- **Co-lead** a team of **11** interdisciplinary team members to develop innovative techniques for growing crops in space.
- Write **Python** script to create a scheduling algorithm that allows robots to effectively and efficiently water the plant.
- Established timeline and **\$1,500** budget, and delegated tasks for on-time completion of a 16-week project under budget. (for Nov 20- Mar 21)

Education

B.S. in Computer Science
Minor in Economics
University of New Mexico (**UNM**)
GPA: 3.7 / 4.0
Graduation: May 2022

Advanced Software Engineering
CodePath.org

Coursework

Software Engineering • Algorithms
• Data Structures • Object Oriented Programming (OOP) • Operating System • Machine Learning

Technical Skills

Programming

Java • Python • JavaScript • C • HTML5 • CSS3 • SQL • Bash

Frameworks/Libraries

React • Vue.js • React Native

Tools

Git • AWS • Node.js • REST API • MongoDB • Redis • Debian Linux

Other skills

Object Oriented Design • SDLC
• Agile Methodology • Docker • Frontend • Backend • UI/UX • Cloud Computing • Web Technologies • Teamwork & Collaboration

Leadership

- **Teamlead**, Food Recovery App, Lead a team of **4** to build an Android/iOS app to reduce food insecurity on-campus, Sept 2020 - Present
- **Secretary**, National Society of Black Engineers (NSBE), July 2020 - Present

Honors & Awards

- **1st** place in UNM Mobile App Contest, 2022
- **1st** place out of 35 teams in NASA MINDS competition for Overall Design, Build, and Demonstration, 2020-2021
- **Finalist** at UNM Mobile App Contest out of 22 teams, 2020