

# Asad Tariq

*MS Computational Social Science, BS Computer Science.*

GitHub | LinkedIn | Email

## Education

### Masters of Science in Computational Social Science

2024-

University of California, San Diego.

Expected Graduation: June 2025

### Bachelor of Science in Computer Science

2019-2023

Habib University, Pakistan.

Graduated with a CGPA of 3.92

Relevant Courses:

Networks, Games and Collective Behavior

Compiler: Design and Construction

Introduction to Deep Learning

GPU Accelerated Computing

Algorithms: Design and Analysis

Data Science

## Awards

### Dean's List

Spring ('23, '22, '21) & Fall ('21)

Habib University, Pakistan

### High Academic Achievement Scholarship

Fall '22

Habib University, Pakistan

### President's List

2021

Habib University, Pakistan

## Work Experience

### Research Assistant, Computer Science

August '23-June '24

Habib University, Pakistan

Creating and grading assignments for undergraduate computer science theory courses, and conducting accompanying programming labs.

Fall '23 Courses:

Object Oriented Programming and Design Methodologies

Operating Systems

Spring '24 Courses:

Graph Data Science

Data Structures II

Software Security

### Research Consultant, Karachi Water Project

June '23-August '23

Habib University, Pakistan

Oversee undergraduate research interns in developing an agent-based simulation model using NetLogo for the current water supply crisis in an urban-industrial sector of Karachi.

## Teaching Assistant

Habib University, Pakistan

Fall 2021:

CS 100 - CS Freshman Seminar

Spring 2022:

CS 201 - Data Structures II

Fall 2022:

CS 100 - CS Freshman Seminar

CS/SDP 361/352 - Social Network Analysis

## App Developer

March '22-May '23

Kashif Iqbal Thalassemia Care Center, Pakistan, Pakistan

Reform an application for Thalassemia major patients by making it more user friendly and adding new features.

## Projects

### Kinship Networks - A Simulation

June '23-June '24

Habib University, Pakistan

A descriptive, evidence-driven agent-based social simulation model, that models and predicts the formation of social ties in the context of marriage.

### VirtYou

Aug '22-May '23

Habib University, Pakistan

Undergraduate Capstone

Revolutionizing Facility Management with Real-Time Monitoring via a Digital Twin

### Lexical Analyzer for TUPLE

Aug '22-Dec '22

Habib University, Pakistan

A lexical analyzer for TUPLE - a dummy programming language.  
(Course - Compiler: Design and Construction).

### Syntax Analyzer/Parser for TUPLE

Aug '22-Dec '22

Habib University, Pakistan

A syntax analyzer for TUPLE - a dummy programming language.  
(Course - Compiler: Design and Construction).

### Semantic Analyzer for TUPLE

Aug '22-Dec '22

Habib University, Pakistan

A syntax analyzer for TUPLE - a dummy programming language.  
(Course - Compiler: Design and Construction).

### A no-win scenario

Jan '22-May '22

Habib University, Pakistan

A simulation in Experiential Learning - The Kobayashi Maru Test  
(Course - Networks, Games and Collective Behavior)

### Summer Tehqiq Research Program

Jun '22-Aug '22

Habib University, Pakistan

Building and testing Transformers for Urdu Language

### Plant Disease Detection Neural Network Model

Aug '21-Dec '21

Habib University, Pakistan

Building a neural network from scratch for plant disease detection based on images of plant leaves in a custom mixed dataset

Plant Disease Detection Neural Network Model

(Course - Introduction to Deep Learning)

### Spooky Tiq Taq Toe

Aug '21-Dec '21

Habib University, Pakistan

A Quantum counterpart to the classical tic tac toe game; Quantum Tiq Taq Toe

(Course - Quantum Computing)

### Cuckoo Hashing

Jan '21-May '21

Habib University, Pakistan

Password salting and schedule verification system

(Course - Data Structures II)

## Organizations

I have been a part of the Karachi Water Project, where I was tasked with researching the feasibility of deploying **Thingsboard**, an open-source IoT platform, for monitoring water quality in Karachi, Pakistan. This project was an initiative of the **Higher Education Commission (HEC)** of Pakistan.

## Skills

**Programming Languages:** Python, C, C#, C++, R, SQL, Cypher, HTML, CSS, JavaScript.

**Tools & Software:** NetLogo, Git, Neo4j, Unity 3D, VS Code, LaTeX, Micro-controllers (Arduino).

**Languages:** English (Native Proficiency), Urdu (Native Language).