Saksham Goel

goelx029@umn.edu | +1 (651)332-6487 | goelx029.github.io/goelx029 | **GitHub:** /goelx029 | **LinkedIn:** /in/saksham-goel

EDUCATION

University of Minnesota -Twin Cities, Minneapolis, Minnesota

Bachelor of Science in Computer Science   *Expected Graduation date – May 2019*

- **CGPA:** 4.00
- **Dean's List:** Fall 15, Spring 16, Fall 16, Fall 17
- **Gopher Gold Scholar**
- **Computer Science and Engineering Scholar**

- **Relevant Coursework:** Program Design and Development, Operating Systems, Database Systems, Software Engineering, Algorithms and Data Structures, Functional Programming, Linear Algebra, Regression, Machine Architecture, Probability

WORK EXPERIENCE

Data Analysis and Management Research Group, UMN, Minneapolis, Minnesota   **September 2017 – Present**

Research Assistant

- Identified and engineered ways of predicting user behaviour in domain of viral marketing by monitoring users' social activity and network structure
- Developed web scraping scripts in python to extract data from Pinterest and Twitter (using API and AIDR), implemented graph processing algorithms (TSM, Multiple Cascade) on the dataset obtained and plot results to showcase the results to achieve better understanding of the dataset and relationships between its properties
- Presented a paper on K-Core algorithm and illustrated possible ways to optimize it for the social influence research project

Artemisia College of Arts and Design, Indore, India   **May – June 2017**

Web Developer Intern

- Developed the website for the Artemisia College of Arts and Design in Indore using HTML and CSS
- Maintained a Git repository for the web development team, helped the team organize it for fast retrieval and transfer of information, delegated tasks to the team members and kept track of their progress

Computer Science Department, UMN   **January 2017 – Present**

Teaching Assistant, CSCI 2041 - Functional Programming

- Debug students' programs written in OCaml and help them understand by pointing out syntactical and logical errors
- Teach core concepts of the functional programming paradigm, answer students' questions in office hours and suggest ways to optimize code by removing redundancies and implementing better coding techniques
- Inspect the automatic feedback and grading scripts for the course to remove possible bugs and grade programming assignments and exams

TECHNICAL SKILLS

- Proficient – Python, Java, C++, C, Linux, BASH, GIT, OCaml, Clojure, MS Office Suite
- Intermediate Proficiency - Assembly, MATLAB, MySQL, HTML, CSS, PHP, JavaScript, XML, Photoshop, Corel Draw

PROJECTS and LEADERSHIP ACTIVITIES

Tac-Tic-Toe, Web Game Development (In Progress)   **January 2018 - Present**

- Developing python scripts using **"pygame"** enabling a user to play different variants of Tic-Tac-Toe (Simple, Three Dimensional (3D), Ultimate, Notakto, Misere) in 2 different modes (vs Player or vs Computer) for 3 different difficulty level against computer
- Engineering python scripts for a computer bot to play against human players using **game theory** algorithms for simple variants while using **heuristic approach** for variants like Ultimate and 3D Tic Tac Toe
- Integrating the game onto a web platform using HTML, CSS, PHP and JavaScript

Robot Game Simulator, Program Design and Development   **September – December 2017**

- Wrote 1000 lines of code in C++ for a robot game simulator involving 7 different types of entities interacting in an arena
- Implemented strategy pattern, observer pattern and polymorphism to achieve desired features in the game
- Implemented mathematical formulas for better performance in the game achieving perfect collisions and faster response.
- Used file parsing to set the initial conditions for the game to avoid recompilation of the large code base regularly
- Refactored the code as per industry standards using the vast functionality provided by GitHub

Bus Line Simulation, Intro to Algorithms and Data Structures   **September – December 2016**

- Wrote 500 lines of code in JAVA using discrete event simulation to simulate the bus line in Minneapolis
- Implemented discrete event simulation using priority queue and adding events in it for passengers and buses
- Gathered statistics and developed a project report to recommend the most cost-effective way of running the bus line in Minneapolis

Campus Outreach + Treasurer, International Buddy Program (IBP), ISSS, UMN   **May 2017 - Present**

- Collaborate with over 200 student groups and organize events serving over 1000 students
- Maintain the organizations budget of over $7000 and outreach for sponsorship