

Utkarshna Sinha

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EDUCATION

Northeastern University

Sep 2019 – Dec 2021

Master of Science in Computer Science, cGPA: 3.75/4.0

Boston, MA

Courses: Computer Systems, Foundations of AI, Algorithms, Database Management

Awards: Scholarship Recipient for GHC 2020 & WiT Regatta 2020

University of Toronto

Sep 2014 - Jun 2018

Honors Bachelor of Science, Human Biology & Psychology

Toronto, ON

Awards: Gordon Cressy Award; Father Robert Madden Award; Dean's List

Activities: Dragonboat Team Captain, Journalist for the Varsity, Biomod Team President

TECHNICAL KNOWLEDGE

Languages

Python, Java, C++, C, Bash, C#

Tools

Linux, Git, VSCode, IntelliJ, Jupyter Notebooks, Unity3D

PROJECTS

Pacman AI Project

Sep 2020 – Current

Northeastern University

Boston, MA

- ♦ Implemented AI search algorithms in **Python** to solve Pacman simulations including DFS, BFS, A*, UCS, minimax, expectimax, alpha-beta pruning with evaluation heuristics
- ♦ Built reinforcement learning algorithms for Pacman including value iteration, q-learning, and particle filtering

Multithreaded Networked Database Server

Sep 2020 – Current

Northeastern University

Boston, MA

- ♦ Built a database server in **C** with a single network listener thread and multiple threads to store data in files
- ♦ Designed the server to handle read, write or delete requests from the network for individual files in database

Declarative Animation Software

Jan 2020 – Apr 2020

Northeastern University

Boston, MA

- ♦ Designed and developed software end-to-end to draw shapes, and transitions, given SVG, or natural language inputs with flexible playback inputs
- ♦ Developed using the Model-View-Controller architecture and applied object oriented programming principles in **Java** with graphics implemented using the **Java Swing UI Framework**

Biomedical Engineering Capstone Design Project

Sep 2017 - Apr 2018

University of Toronto

Toronto, ON

- ♦ Prototyped a 3D printed electronic medical device (spirometer) integrated with an **Android** app and game
- ♦ Added a game and graphics using **Unity3D**, **Python**, and **C#**
- ♦ Coordinated with healthcare providers to assess user needs, define project scope, track milestones

WORK EXPERIENCE

Graduate Teaching Assistant

Jan 2020 – Current

Northeastern University

Boston, MA

- ♦ Lead office hours, 1-1 tutoring sessions, and recitations to answer questions for fundamental **Python** course
- ♦ Designed automated test suites for comprehensive evaluation of programming assignments
- ♦ Evaluate programming assignments and exams, and provide feedback on accuracy, style, and documentation

Research Student in Synthetic Biology and Microbiology Labs

Sep 2015 – Apr 2017

University of Toronto

Toronto, ON

- ♦ Conducted science research resulting in **two written theses, ten poster and oral presentations** at conferences, and **two peer-reviewed publications** - International J of Antimicrobial Agents & American J of Physiology
- ♦ Awarded David S. Bruce Abstract Award at the international Experimental Biology Conference
- ♦ Studied sex-differences in lung disease, antibiotic resistance to drugs, and synthetic biology for virus detection