

SUPRATIK NEUPANE

EDUCATION UNDERGRADUATE

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Code repository: github.com/supratikn

State University of New York At Buffalo **Fall 2016 - Fall 2019 (Expected)**

BS in Computer Science

Dean's List

Honors College

Cumulative GPA: 3.86/4.00

Notable Courses

Data Structures

Probability Theory

Programming Languages

Multivariable Calculus

Algorithm Design

Computer Organization

Linear Algebra

How the Internet Works

WORK EXPERIENCE

MOBILE DEVELOPER

Niagra Frontier Transportation Authority **June 2018 - September 2018**

- Developed an android app to help report conditions of the NFTA bus stops. ([Android/Java/XML](#))
- Used queries and Google Play-services to map the bus stops to precise locations.
- Used Google Firebase Database and Firebase Storage to host a server that records all the submissions, including images, made by NFTA employees through the app.
- Managed a database of over five thousand entries for bookkeeping purposes.

UNDERGRADUATE RESEARCH ASSISTANT

Formal Verification of Randomized Programs, **May 2018 - Present** University at Buffalo

- Learned to use Coq to formally prove theorems and algorithms. ([Coq/OCaml](#))
- Worked with Dr. Marco Gaboardi to verify randomly generated Cryptography and Security programs.
- Used Coq to verify Probabilistic Models of Machine Learning algorithms.

UNDERGRADUATE TEACHING ASSISTANT

Department of Computer Science and Engineering, **August 2017 - Present** University at Buffalo

- Run recitations and hold office hours each week for **Intro to Computer Science (I and II)** ([175-students](#)), **Programming Languages** ([80](#)) and **Software Engineering Concepts** ([15](#)).
- Help debug their Java/Python/OCaml code and demonstrate good coding practices.
- Run review sessions before exams and deadlines.
- Grade handwritten exams and set up auto-grader for programming assignments. ([Python/Java/JavaScript](#))
- Manage teams for group projects and work like a project manager.

PROJECTS

C++, HTML

HTML Parser/ Validator

- Takes an HTML file and based on tags, spacing, titles and IDs, checks if it is a valid HTML.
- If the HTML file is valid, then creates a DOM tree based on all the HTML tags

PYTHON, STANDARD ML

Language Interpreter

- For a command based language from an input text file that does arithmetic and logical calculations along with binding to variables and function calls, created an interpreter program that store all these commands on a stack.
- Using functional programming in Python and Standard ML, computed the results of these commands and wrote the output to a text file.

UNITY 3D UNREAL ENGINE 4

M.I.A.

- A story driven game where the protagonist is a powerful android whose seeks to bring people and androids together through compassion and diplomacy instead of brute force. (Currently in the process of extending it to Unreal Engine)

PYTHON, NODE.JS

App Store Crawler

- Starting from an app, finds a way to get to a specific app with the shortest possible page jumps by using BeautifulSoup to create a bidirectional graph and Dijkstra's algorithm to compute the path.
- Stores all the apps in a path as nodes of an undirected graph.