

GILVIR GILL

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GITLAB gitlab.com/Gillgamesh

EDUCATION

STONY BROOK UNIVERSITY

Aug. 2018 - Dec. 2021

- ▶ **GPA 3.96 Major GPA 4.0**
- ▶ Pursuing Bachelors in Computer Science and Mathematics with Political Science minor.

EXPERIENCE

RESEARCHER/ COORDINATOR

SBU PoliTech
Aug. 2019 - Present

- ▶ Aggregated Census and election data for 36 states using PySAL and GeoPandas. Wrote Java library (used in senior capstone class at SBU) for automated approaches to congressional redistricting.
- ▶ Updated the demo system (Java/Spring) by adding new geometry-based population and compactness measures via JTS; replaced frontend visualization app with a React/Leaflet version.

UNDERGRAD TA

SBU C.S. Dept.
Aug. 2020 - Dec. 2020

- ▶ Teaching Assistant/Grader for Honors Theory of Computation (CSE 350) under Dr. Michael Bender. Course requires rigorous proofs in domains such as finite automata and complexity theory.
- ▶ Will conduct office hours and recitation. Working to transition to an online format, while maintaining the unique student-driven learning environment of the course.

MENTOR

Kinet-X
Jul. 2017 - Present

- ▶ Developing curriculum and leading courses for 20+ students (grades 6-11) using Arduino IDE and various sensors, motor controllers, and other electronics.
- ▶ Taught 100+ beginner students (grades 4-7) basic electronics (breadboard prototyping, soldering, circuit solving), and 40 students (grades 5-8) introductory robotics with mBlock and Arduino.

PROJECTS

NYCIML SCORING

A scoring system for math competitions used by a 40-school math league with 550+ students, featuring a GraphQL API (Flask, SQLAlchemy, Graphene; custom integration of Graphene and Cerberus), and a React/Apollo front-end.

Dec. 2018 - Present

PATHFINDER

A JavaFX-based visualizer for pathfinding algorithms performed on a 2D grid that shows how nodes are expanded by a given algorithm (Dijkstra's, distance-heuristic A*, etc.). Includes a built-in map editor and animation speed control/stepping.

Apr. 2019 - May 2019

GO GRAPHICS ENGINE

A Go-based 3D graphics/animation renderer and primitive CPU-based matrix library with parallelism, written from scratch. Supports Gouraud shading/Phong Reflection, affine transformations and keyed animations on .obj files.

Jan. 2018 - Jun. 2018

ACHIEVEMENTS / SKILLS

COURSEWORK

Honors Data Structures & Algorithms, Finite Math Structures, Statistics, Complex Analysis, Honors Theory of Computation, Systems I & II, Computer Networking, Natural Language Processing, Applied Real Analysis (PDEs)

LANGUAGES

Java, Python, Go, C, JavaScript/TypeScript

TOOLS & FRAMEWORKS

Node, Encog, Flask, (Geo)Pandas, PyTorch, MongoDB, SQL, React, GraphQL (Graphene, Apollo Client), MobX, PostGIS

ACHIEVEMENTS

Junior Academy Biodiversity Challenge Winner (2017)
"Best Use of Blockstack" \$1000 prize at HackPrinceton (2019)
Member of C.S. Honors program at Stony Brook

OTHER SKILLS

Arduino, Adobe Illustrator/Photoshop, AutoCAD, SolidWorks