Het Patel

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Education

The State University at New York at Buffalo *August 2023 – May 2027*
BS in Computer Science

- **Minor:** Statistics
- **GPA:** 4.0/4.0
- **Coursework:** Operating Systems, Machine Learning, Computer Organization, Systems Programming, Data Structures, Algorithms, Regression, Probability

Technologies

Languages: C, Java, Python, JavaScript, HTML, CSS

Frameworks: React, Express, Vite, Tailwind, Numpy, Pandas, scikit-learn, TensorFlow, JUnit, MicroPython

Tools: Git, Google Colab, npm, Webpack, Minitab

Environments: Fedora Linux, Windows, Node.js

Projects

Salary Estimator *github.com/HP-002/salary_estimator.git*
Tools: Python, Google Colab, Scikit-learn, TensorFlow

- Implemented 15 machine learning algorithms (e.g., Logistic Regression, Random Forest, XGBoost, SVM, Neural Networks) to classify income levels, using scikit-learn, XGBoost, LightGBM, and TensorFlow.
- Analyzed model performance through precision, recall, F1 score, and visualizations to compare algorithm effectiveness and optimize classification accuracy.

IPOPT (Research) *github.com/HP-002/slip_ipopt*
Tools: C, IPOPT, Mathematica, Python

- Programmed Interior Point Non-linear Optimizer for a Spring Loaded Inverted Pendulums (SLIP) robot.

Tenzies Game *github.com/HP-002/tenzies*
Tools: React, Vite, CSS *Live Demo*

- Tenzies is a fun and interactive dice game built using React and Vite.
- Implemented stateful game logic, real-time UI updates, and win detection with celebratory confetti animation while focusing on clean component architecture, responsive design, and engaging user experience.

Cellular Automaton Simulator *github.com/HP-002/alices-game-of-life*
Tools: C++, Arduino Uno R4, NPN Transistors

- Developed a Cellular Automaton Simulator following Conway's fundamental rules along with randomization.
- Programmed Arduino Uno R4 Microcontroller in C++ to stimulate generations in a 2-D grid. Designed and integrated a logic circuit using NPN Transistors and diodes to process states following Conway's rules.

Experience

Peer-Assisted Learning (PAL) Leader *Buffalo, NY*
Tutoring & Academic Support Services *Feb 2024 - Present*

- Facilitate collaborative review sessions that reinforce core concepts in Statistical Methods through peer-led learning, problem-solving, and exam-focused strategies.
- Designed and maintain a JavaScript-based resource website (PAL Webpage) to centralize study materials, practice problems, and session content for student access outside the classroom.
- Coordinate with faculty by attending lectures and aligning session content with course goals to ensure academic support is relevant and effective.

Math Place Tutor *Buffalo, NY*
Thomas J. Edwards Undergraduate Learning Center *Feb 2024 - Present*

- Provide tutoring support in Algebra, Precalculus, Business Math, and Calculus I & II, tailoring assistance to individual student needs.
- Help students develop a deeper understanding of course material while facilitating active learning habits and independent problem-solving skills.