Varun Parikh

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EDUCATION

University of Waterloo — Waterloo, ON
Bachelor of Software Engineering — Sep. 2022 – Present

Henry Wise Wood High School — Calgary, AB
Alberta High School Diploma; IB. Diploma — Sep. 2019 - Jun. 2022

TECHNICAL SKILLS

Programming Languages: Python, C/C++, VHDL, HTML, CSS, JavaScript, TypeScript, SQL

Tools: Git, MATLAB, LaTeX, Excel, GCP, Pandas, UNIX

PROJECTS

Interactive Chess Board: A 4x4 interactive chess board made as a teaching tool for beginners.
- Led design for processing sensor inputs and tracking pieces.
- Used an Arduino and hall sensors to track pieces.
- Highlights legal moves when pieces are picked up, and flags illegal moves when made.
- Made primarily in python, using the library pyfirmatta.

VrnHDL: A simple description language for generating simple circuit diagrams.
- Capable of drawing simple digital circuit diagrams iteratively and easily.
- Made in Python, using the PIL library for image rendering.

OnitamaAI: AI that plays the board game Onitama.
- Made in Python, implemented using a minimax algorithm with alpha-beta pruning.
- Capable of beating most human players.

BlockPusher: A sokoban style puzzle game made in python using pygame.

8-Bit CPU: An 8-Bit CPU created in Minecraft.
- Made purely using Minecraft circuits (redstone).
- Capable of adding, subtracting, bitshifting, conditional jumping, and Boolean logic.
- Test programs included calculating the Fibonacci sequence, and finding the product of two numbers.

Quine-McCluskey Solver: A tool that implements the Quine-McCluskey algorithm
- Takes a list of minterms, don't cares, and a size, and returns a simplified boolean expression.

EXPERIENCE

Private Tutor — Sep. 2021 - Feb. 2022
- Tutored Calculus 1 for first year university students.
- Tutored Introductory Classical Mechanics courses for first year university students.

DriveSports Badminton | Coach — Jun. 2019 - Jun. 2022
- Led groups of beginner youth students, and taught them badminton fundamentals.

AWARDS

Canadian Computing Contest Senior (2022): Certificate of Distinction
Canadian Open Mathematics Challenge (2021): Performance with Distinction