Varun Parikh

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www.github.com/vrnprkh

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Technical Skills

Programming Languages: Python, C/C++, VHDL, HTML, CSS, JavaScript, TypeScript, SQL, MATLAB
Tools/Misc: Git, LaTeX, Markdown, Excel, Pandas, pygame, PIL, pyfirmata, jinja, UNIX, Flask, GCP, DigitalOcean, Arduino

Work 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 up to 8 beginner youth students, and taught them badminton fundamentals
- Offered one-on-one training and feedback tailored to each student's needs and learning styles

Projects

Interactive Chess Board: A 4x4 interactive chess board made as a teaching tool for beginners.

- Used an Arduino and hall sensors to track pieces
- Highlights legal moves when pieces are picked up, and flags illegal moves when made
- Led design for processing sensor inputs and tracking pieces
- Made primarily in python, using the library pyfirmata
- **Technical Skills:** Python, pygame, pyfirmata, Arduino

VrnHDL: A simple easy to use markup language for generating simple digital circuit diagrams.

- Simple syntax can be used to create digital circuit diagrams, quickly and iteratively
- Made in Python, using the PIL library for image rendering
- A simple website was made for this project using Flask
- **Technical Skills:** Python, PIL, Flask, HTML, CSS, jinja, DigitalOcean

OnitamaAI: AI that plays the board game Onitama.

- Made in Python, implemented using a minimax algorithm with alpha-beta pruning
- Capable of beating experienced human players more than 90% of the time
- **Technical Skills:** Python

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

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

- **Technical Skills:** Python, pygame

Education

University of Waterloo Waterloo, ON
Bachelor of Software Engineering (Honours) Candidate, with Co-op Sep. 2022 – Present

Awards

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