Karthik Vedantham

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Education:

- **National Institute Of Technology, Hamirpur** Hamirpur, H.P., India
  Dual Degree Bachelor and Master of Technology in Computer Science and Engineering *Aug. 2016 – May. 2021*
  B.Tech CGPI – 9.44/10 (Rank 2) *M.Tech CGPI – 9.5/10*

Skills:

- **Programming Languages:** C (good), C++ (good), Python3 (prior experience), C# (prior experience)
- **Tools/Frameworks:** OpenCV (good), Unity 3D (good), Linux (beginner), Git (beginner), WRLD SDK, OpenGL (prior experience), MySQL (prior experience), Android Development (prior experience)

Experience:

- **MITACS, Canada** British Columbia, Canada
  Globalink Research Intern 2019 *May. 2019 - Aug. 2019*
  Supervised by Dr.Andrew Park, Associate Professor at Thompson Rivers University, Kamloops, Canada
  - Worked on the project "Detecting Possible Lone Wolf Terrorist's Locations" using WRLD SDK to create 3D spatial analysis and real world simulations and achieved 80% accuracy in prediction.
  - Co-wrote the research paper "Detecting Possible Lone Wolf Terrorist's Locations", was accepted for the IEEE IEMCON 2019 conference

Projects:

- **Detecting Possible Lone Wolf Terrorist's Locations:** *(C#, R, Unity3D, WRLD SDK)*
  A computational framework providing an alternative way to detect possible locations lone-wolf terrorists might use in a possible real life attack; using three dimensional spatial analysis algorithms and real world simulations.

- **Sudoku Solver:** *(Python3, OpenCV)*
  Implemented a sudoku solver that detects sudoku puzzles from images, extracts digits and solves the puzzle. Programmed keeping modularity and OOPS as primary requirements.

- **Slate:** *(C++, OpenCV)*
  A new interface, which takes input by waving 'red LED light' in front of a webcam. Slate recognises human handwriting written on it. Includes a calculator, sketch-board (with eraser), gesture control, ASCII-art.
  Winning project of Hack on Hills 3.0, 2018.

- **Chess 3D**: *(C#, Unity3D)*
  Chess game built from scratch in C# using Unity3D and OOPS concepts.
  Developed in accordance to Universal Chess Interface by using a state machine for the game.
  Modularised code to implement efficient board representation, game management and chess moves.

Accomplishments

- Interviewed by various prominent Canadian radio and television networks, about my project during the MITACS research internship. *July. 2019*
- Co-wrote a research paper on new alternative method to detect possible lone-wolf terrorist's locations which can be used to assist counter terrorism measures. *July. 2019*
- Ranked **1146th** globally in Google HashCode 2020 Online Qualification Round. *Feb. 2020*
- Ranked **575th** globally in August Challenge 2018 on Codechef. *Aug. 2018*
- Ranked **3rd** in Hackathon (Hack on Hills 3.0) conducted by Hackerearth. *Mar. 2018*
- Ranked **3rd** in Hack 2.0 conducted at National Institute of Technology, Hamirpur. *Feb. 2018*

Courses

- Analysis and Design of Algorithms, Compiler Design, Neural Networks and Fuzzy Logic, Data Structures, Operating System,

  Advanced-Database Management Systems.

Co-curriculars

- Volunteer at GLUG NIT-H. *Mar. 2017 - Present*
- Core-coordinator at Team Pixonoids, NIT-H. *Mar. 2017 - Present*
- Convener at Computer Science Engineers Community, NIT-H. *Feb. 2017 - Present*