

Karthik Vedantham

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Education:

- **National Institute Of Technology, Hamirpur**

Dual Degree Bachelor and Master of Technology in Computer Science and Engineering
CGPI – 9.43/10 (Rank 2)

Hamirpur, H.P., India

Aug. 2016 – May. 2021

Skills:

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

Experience:

- **MITACS, Canada**

Globalink Research Intern 2019

Supervised by Dr. Andrew Park, Associate Professor at Thompson Rivers University, Kamloops, Canada

British Columbia, Canada

May. 2019 - Aug. 2019

- Worked on the project "Detecting Possible Lone Wolf Terrorist's Locations" using WRDL SDK to create 3D spatial analysis and real world simulations with upto 70% improved accuracy.
- 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, WRDL 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. Simulation output correlated with past real world data with upto 70% accuracy.
- **Sudoku Solver:** (Python3, OpenCV)
Implemented a sudoku solver that detects sudoku puzzles from images, extracts digits and solves the puzzle. Digit extraction library is self-written and image preprocessing is done using OpenCV. Programmed keeping efficiency, 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, Neural Networks and Fuzzy Logic, Data Structures, Operating System, Advanced-Database Management Systems.

Co-curriculars

- Volunteer at GLUG NIT-H in conducting Software Freedom Day every year. *Mar. 2017 - Present*
- Core-coordinator at Team Pixonoids, NIT-H. Head of animation department for two years. *Mar. 2017 - Present*
- Convener at Computer Science Engineers Community, NIT-H. *Feb. 2017 - Present*