# Abhi Kamboj

Akamboj2@illinois.edu | +1 763-923-3667 | 14705 61ST Ave N, Plymouth, MN 55446
Akamboj2 Abhi-Kamboj

## ACADEMIC PROFILE

**University of Illinois at Urbana Champaign** **May 2021**
***Bachelor of Science in Computer Engineering*** ***GPA: 3.86/4.0***

- Dual Degree: Bachelor of Science in Innovation, Leadership, and Engineering Entrepreneurship
- Honors: Chancellor's Scholar, James Scholar, IEEE Eta Kappa Nu Honors, Tau Beta Pi Engineering Honors
- Key Courses: Intro to AI, Deep Learning in Hardware, Quantum Info Theory, x86 OS Dev, FPGA Digital Systems
- Leadership Certificate: Developed leadership skills through workshops, reflections, and professional mentors
- Lab Project: Created autonomous color-following robot using PIXY camera, Arduino, and 2 stepper motors

**Study Abroad at Ecole Polytechnique Fédérale de Lausanne, Switzerland** **Aug 2019 - Dec 2019**

- Key Courses: Machine Learning, Embedded Systems, Networks, Algorithms, Functional Scala, Security
- ML Project: created a building classification system in python for a civil engineering lab by identifying the buildings' opening to facade ratio with a Torchvision CNN and using images from the Google Streetview API

## PROFESSIONAL EXPERIENCE

**Big Data Platform Engineering Intern at Western Digital, San Jose, CA** **May 2020 - July 2020**

- Enhanced internal applications and tools, revitalizing and standardizing python code and Docker containers
- Created 3 Splunk dashboards to monitor web traffic and user logins, streamlining the team's efficiency

**Software Engineering Intern at Collins Aerospace, Cedar Rapids, Iowa** **Jun 2019 - Aug 2019**

- Developed and booted a Linux configuration for the Ultrazed EV Xilinx processor allowing for company-wide testing and development of operating environments and waveform applications for software defined radios
- Revitalized 6 Linux drivers using pc-lint debugging, decreasing potential software malfunctions in the radios

**NSF REU in Robotics and Artificial Intelligence Lab, University of Minnesota-Twin Cities** **May 2018 - Aug 2018**

- Researched intelligent robot navigation and obstacle avoidance under Dr. Volkan Isler
- Developed an autonomous indoor navigation system for a Create2 iRobot with a 2D Hokuyo laser and SLAM
- Implemented and studied algorithms such as random trajectory generation, A*search, Kalman filters, etc.
- Actualized Q-learning algorithms in VREP robot simulator and further studied reinforcement learning

**Research at Graphics and Visualization Lab, University of Minnesota-Twin Cities** **Aug 2016 - May 2017**

- Conducted research examining the use of hands in VR with UnrealEngine under Dr. Victoria Interrante
- Presented a project titled "A More Immersive Virtual Reality: The Effect of Haptics on Agency and Ownership in a Virtual Environment" and received Minnesota Scholars of Distinction Award (May 2017) for research

## LEADERSHIP AND EXTRACURRICULARS

**ECE 385 Digital Systems Course Assistant, UIUC** **Aug 2020 - Present**

- Assisted students in developing a logic processor and RAM using TTL chips on a breadboard
- Guided students in learning SystemsVerilog programming and FPGA concepts such as state machines, simulations, testbenches, synchronization, memory layout, timing analysis, etc.

**PULSE Competitions Committee Director, UIUC** **July 2019-Present**

- Coordinated a university wide coding competition and hardware hackathon with more than 80 participants
- Developed programming questions and test cases involving dynamic programming, DFS/BFS, topological sort, etc. from subjects such as AI, parallel programming, and computer security for beginner and advanced levels

**Institute of Electrical and Electronics Engineers (IEEE), UIUC** **Aug 2017 – Aug 2019**

- Corporate Committee: Networked with companies to arrange Tech Talks and Info Sessions

**Circuit Design Research Project, UIUC Aerodynamics Lab** **Aug 2018 - Dec 2018**

- Designed solar MPPT charge controller circuit for an autonomous solar powered aircraft using EagleCAD

**iRobotics, UIUC** **Aug 2017- May 2018**

- Tour Robot: Programmed an audio system of an autonomous GPS-navigation based outdoor robot tour guide
- Drawing Robot: Created a command system for communication and programmed mechanical parts in python

## SOFTWARE SKILLS

C++/C, Python, System Verilog, VHDL, Scala, Java, ROS, Git/Agile, x86 Assembly, MATLAB, Splunk, Buildroot