

# PRATIK RAJESH SAMPAT

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## Education

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### University of Illinois at Urbana-Champaign

May 2024

*Master of Science in Computer Science*

**Relevant Coursework:** Operating Systems, Computer Architecture

### PES University

May 2019

*Bachelor of Technology in Computer Science and Engineering*

CGPA: 8.87 / 10

**Relevant Coursework:** Operating Systems, Computer Architecture, Databases, Algorithms

## Experience

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### University of Illinois at Urbana-Champaign

Aug 2022 - Present

*Research Assistant*

*Champaign, IL*

*Advisor: Dr. Saugata Ghose*

- Graduate researcher in ARCANA Research Group exploring interaction between systems software and memory hardware.

### University of Illinois at Urbana-Champaign

Aug 2022 - Present

*Teaching Assistant*

*Champaign, IL*

- Teaching assistant for CS 233 - Computer Architecture for Fall 2022 with responsibilities that include grading, proctoring, assisting with group assignment and conducting conceptual office hours

### IBM, Linux Technology Center

Aug 2019 - Jul 2022

*Software Engineer*

*Bengaluru, India*

- Enabled and enhanced energy management for the IBM POWER platform on Linux
- Proposed a weighted probability approach for CPU-idle state selection. Presented in the OS-Directed Power-Management Summit, (OSPM) Italy - May 2020; proposal covered in the Linux Weekly News
- Proposed CPU namespace to virtualize and isolate topology information for containerized applications. Presented in the Linux Conference Australia (LCA) - January 2022; proposal covered in a phoronix article

### IBM, Linux Technology Center

Jan 2019 - Jun 2019

*Software Engineering Intern*

*Bengaluru, India*

- Enabled the IBM POWER architecture on the gem5 open-source simulator
- Assisted in bringing-up and booting a full system multi-threaded Linux kernel on the gem5 architectural simulator

### Carnegie Mellon University

Jun 2018 - Jul 2018

*Summer Undergraduate Intern*

*Pittsburgh, PA*

- Profiled the Linux Operating System to extract the kernel view of memory and analyze access patterns
- Simulated a memory prefetching algorithm based on N-grams and evaluated its performance with the state of art in a simulated environment

### Microsoft Innovation Labs

Jun 2016 - Jul 2016

*Intern - PES University*

*Bengaluru, India*

- Prototyped a Virtual reality sandbox experience and created an interface using 3D depth processing of the Microsoft Kinect Camera

## Technical Proficiency

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**Programming Languages:** C / C++, Python, Bash Scripting

**Technologies:** Linux Operating System, Energy Management, Containers, Mixed Reality

## Publication

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Vinay, A., **Sampat, P. R.**, Belavadi, S. V., Pratik, R., Rao, B. S. N., Ragesh, R., Murthy, K. N. B., & Natarajan, S. (2018, March 1). Face recognition using interest points and ensemble of classifiers. IEEE - Recent Advances in Information Technology (RAIT), Indian Institute of Technology, Dhanbad, India

## Honor and Awards

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| • Linux & Power Significant Contributor Open Source Recognition Program, IBM | <b>Dec 2021</b> |
| • Exemplary Rookie, General Manager awards, IBM                              | <b>Sep 2021</b> |
| • Winner - India Systems Development Labs Hackathon, IBM                     | <b>Jan 2020</b> |
| • Prof. CNR Rao Merit Scholarship, PES University                            | <b>Feb 2019</b> |
| • First at Endeavour'17 business strategy competition                        | <b>Nov 2017</b> |
| • Second runner up - Microsoft HashCode 2k17 Hackathon                       | <b>Nov 2017</b> |
| • First runner up - Honeywell Power of connected Hackathon                   | <b>Jun 2017</b> |
| • First runner up - Microsoft Hashcode 2k16 Hackathon                        | <b>Nov 2016</b> |
| • Second runner up - Pluralsight Smarter Than Yesterday Hackathon            | <b>Aug 2016</b> |
| • First at Intel Anadigix IoT Event  | <b>Aug 2015</b> |

## Projects

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**Haptic Feedback glove** **Jan 2016 - Sep 2018**

*Indian patent pending: 201841036867*

- A force feedback haptic glove designed to provide realistic sensations of the shape and the stiffness of objects in the virtual space
- An algorithm also devised to convert any three-dimensional model, to a haptic space matrix such that each surface is mapped to a force-feedback sensation on the glove

**Sound based Augmented Reality Spectacles** **Nov 2018**

- A smart-glasses project that re-imagined augmented reality through sound via bone conduction rather than a head-mounted display
- The regular pair of spectacles were retrofitted with an AVR-Arduino microcontroller, a pair of bone conduction speakers, a bluetooth module for communication, and, a capacitive touch interface was designed for the frames