

# Arushi Rai

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## Education

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### Illinois Institute of Technology

July 2017 - Dec 2020

*Bachelor of Science in Computer Science*

*GPA: 3.76*

**Honors:** Magna Cum Laude

**Relevant Coursework:** Philosophy and Psychology of Language, Geospatial Vision and Visualization, Linear Algebra, Operating Systems, Data Mining, Probability and Statistics, Regression, Online Social Networks Analysis

### De Anza College

June 2015 - June 2017

*Dual Enrollment in High School*

## Professional Experience

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### Chatchamp

June 2018 - Dec 2018

*Software Engineering Intern*

- Independently created a small microservice in a service oriented architecture while on-site to provide e-commerce analytics from Magento shops
- Understood two codebases (approx. 20,000 lines each) and fixed bugs in unfamiliar languages (Node.js, RoR, Hugo, PHP) with only one point of contact while working remotely from Oct 2018

## Research Experience

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### Research Experience for Undergraduates in Computer Vision

May 2020 - August 2020

*University of Central Florida — Center for Research in Computer Vision*

[Link to Paper](#)

**Project Name:** Unsupervised Activity Representation Learning in Long Complex Activities — **Supervisor:** Dr. Yogesh Rawat

- Adapted SOTA frameworks such as DeepCluster and XDC in Pytorch to handle video and caption data
- The text and video encoder was trained from psuedolabels, the clustering assignments of feature embeddings. Utilized NLP methods to extract feature embeddings from captions. The feature embeddings for videos was extracted from the I3D architecture (video encoder) without fully connected layers.
- My model using the text modality improves performance of video representation on task classification by 5%

### Elevate Research Experience

May 2019 - June 2019

*Illinois Institute of Technology*

[Link to Slides](#)

**Project Name:** Moving beyond Cameras for 3D Perception: LiDAR — **Supervisor:** Dr. Xin Chen

- Implemented an advanced data structure: out of core Nested Octree to store massive LiDAR data in Python while solving for misalignment
- Investigated creation of empty nodes and presented the solution, a density-based tree to Dr. Xin Chen, the Director of Engineering at HereTech

### Research Experience for Undergraduates in High Performance Computing

July 2017 - Dec 2017

*Illinois Institute of Technology*

[Link to Blog](#)

- Modularised legacy HPC scheduler simulator in order to support new network architectures in Python
- Practically understood the resource management system for Argonne National Laboratory's HPC

## Highlighted Projects

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2020 — **News Agreement** Applied neural networks in **Keras** to classify agreement between pairs of news titles

2019 — **s-cube** Designed wireframe to connect Chicago youth to local resources through STEAM-based projects

2016 — **Heuristics** Vehicle tracking and geofencing through Wifi and GPS in **Android and Java**

## Teaching Experience

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### Computer Science Lab Assistant

Jan 2020 - May 2020

*CS 351: Systems Programming*

*Illinois Institute of Technology*

- Ran 1 hour of demos and 2 hours of office hours to help students on assignments every week
- Created and presented 13 engaging demos that would teach C and systems programming concepts effectively

### Peer Tutor

Jan 2020 - May 2020

*Academic Resource Center*

*Illinois Institute of Technology*

- Provided 10 hours of tutoring weekly to undergraduates across previously taken CS courses and programming help in Python, Java, and C
- Attended workshops to improve my tutoring pedagogy
- Adapted tutoring to online due to COVID-19 pandemic

### Supplemental Instructor

Aug 2019 - Dec 2019

*MATH 148: Precalculus*

*Illinois Institute of Technology*

- Created material and facilitated reviews prior to exams
- Created supplemental problem sets for bi-weekly review sessions
- Attended all days of the course to stay up to date with in-class instruction

### Facilitator

June 2019 - Aug 2019

*Explore Engineering: Ten80 Student Race Challenge*

*After School Matters — Project Exploration*

- Coordinated across Project Exploration, ASM, and the S4 program in San Francisco to have 15 students from underrepresented backgrounds build and launch microsatellites while having limited resources and a short deadline

### CodeCoach

Jan 2018 - Mar 2018

*theCoderSchool*

- Developed a project based curriculum and taught concepts such as object oriented programming and networking with over 20 students and languages such as Python, Java, C++/C, ReactNative and Android development

## Relevant skills

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**AI:** Python, PyTorch, Keras, SciKit-Learn, Pandas, SQL, OpenCV, NetworkX

**Other:** Java, C, C++, Haskell, React, Flask, LaTeX, Pitching

## Awards and Leadership

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### SCHOLARSHIPS AND AWARDS

2020     **Honors** Magna Cum Laude

***Awarded By IIT***

*Full-tuition scholarship*

2017-     **Recipient** Camras Scholarship - Academic & Leadership Achievement

*Awarded to 1% of school*

***Awarded By IIT***

2017-     **Recipient** Dean's List x3

***Awarded By IIT***

### PRIZES

2020     **Runner Up** Best Water Conservation Hack

*BoilerMake Hackathon at  
Purdue*

2020     **1st Place** Best Design using Sketch

*BoilerMake Hackathon at  
Purdue*

2019     **1st Place** Human-Centered Design Track on IPro Day

*\$1000, 1/100 teams  
**Awarded By IIT***

2019     **1st Place** Best Voice Experience for Ulta Beauty using Google Cloud

*Out of 300 participants  
Dare Mighty Things  
Hackathon*

## ORGANIZATIONS

2020- **President** ACM@IIT

*Association for  
Computing Machinery  
Chapter*

2017- **Member** ACM@IIT

## CONFERENCES

2020 **Attendee** EMNLP Conference

2019 **Attendee** Grace Hopper Conference

## References

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**Dr. Yogesh Singh Rawat**

*Supervisor*

Assistant Professor at University of Central Florida

*yogesh [at] crcv [dot] ucf [dot] edu*

**Dr. Niels da Vitoria Lobo**

*Supervisor*

Associate Professor at University of Central Florida

*niels [at] cs [dot] ucf [dot] edu*

**Dr. Xin Chen**

*Supervisor*

Lecturer at Illinois Institute of Technology

*xchen80 [at] iit [dot] edu*