# AAMIR HASAN

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## RESEARCH INTERESTS

Human Behavior Modeling, Perception, Computer Vision, Artificial Intelligence and Machine Learning

## EDUCATION

**University of Illinois at Urbana-Champaign** *2019 - Present*
Doctor of Philosophy in Electrical and Computer Engineering
Overall GPA: 3.80

**University of Illinois at Urbana-Champaign** *2016 - 2019*
Bachelor of Science in Computer Engineering
Graduated with High Honors
Overall GPA: 3.84

## PUBLICATIONS

### Journal Articles

- Z. Huang, **A. Hasan**, K. Shin, R. Li, and K. Driggs-Campbell. Long-term pedestrian trajectory prediction using mutable intention filter and warp lstm. *IEEE Robotics and Automation Letters*, 6(2):542–549, April 2021
- Praveenkumar B. A., Srinivas A., **H., Aamir**, Anush S. K., Amogh M., Anirudh A., Devivaraprasad M., Rajashekar M., and Suresh K. A cloud-based technology solution for geo-spatial mapping of diseases among children for strategic healthcare planning in rural india. *ASCI Journal of Management*, 46:77 – 88, 2017

### Undergraduate Thesis

- **A. Hasan**. Meta-path analysis for community detection in heterogeneous graphs with ground truth labels. May 2019

## RESEARCH PROJECTS

**Meta-path Analysis on Spatio-Temporal Graphs for Trajectory Prediction** 2020 - Present

- Analysing meta-path based features on spatio-temporal graphs combined with a structural RNN structure to predict agent trajectories in autonomous scenes.

**Meta-path analysis for community detection in heterogeneous graphs with groundtruth labels** 2018 - 2019

- Exploited meta-path based features by modifying the GeneMAPR algorithm to perform community detection of General Knowledge Graphs.

**A Cloud-based Technology Solution for Geo-spatial Mapping of Diseases Among Children for Strategic Healthcare Planning in Rural India** 2015 - 2016

- Developed an Android Application for Data Collection and a Web Application for Data Collection and Analysis for better visualization of disease spread in children living in rural India. The results were utilised by the Government of India to improve the lives of those affected.

## EXPERIENCE

**Planbook Innovation Inc.** May 2016 - August 2016
*Full Stack Web Development Intern* *Bloomington, IL*

- Designed ToDo List and Sticky Note features for the company's main product, planbook.com.
- Designed a 'Period Schedule' feature for easier scheduling for teachers.
- The features designed went into production at the end of the internship and enhanced the user's experience with the website.

## TEACHING EXPERIENCE

### Graduate Teaching Assistant

**ECE 391 - Computer Systems Engineering** August 2019 - Present

- Head TA for Fall 2020 and Spring 2021.
- Taught discussion sections every week to help students with course material.
- Held supplemental sessions every week to enhance student knowledge in certain topics for the class.
- Designed and graded exam questions, and held office hours every week.
- Managed Piazza and Slack for intra-staff communication.
- Created an infrastructure for holding office hours and demos online on Discord with a fully functional bot to work around COVID-19.
- Received the 'Harold L. Oelson Undergraduate Teaching Award' for Fall 2019. Nominated for the award for Fall 2020.

### Undergraduate Course Assistant

**ECE 391 - Computer Systems Engineering** August 2018 - May 2019

- Held office hours every week and assisted in grading weekly assignments and exams.

**CS 461 - Introduction to Computer Security** January 2019 - May 2019

- Helped hold office hours, and grade and write multiple choice exams questions

**ECE 314 - Probability in Engineering Laboratory** August 2017 - December 2018

- Grader for online Labs done on iPython Notebooks on topics related to probability and simulations

**CS 126 - Software Design Studio** January 2017 - May 2019

- Moderated Code Reviews for students every week and gave them feedback regarding coding style and formatting to improve their skills

## COURSE WORK

### Artificial Intelligence and Machine Learning

- ECE 448 - Artificial Intelligence
- ECE 446 - Machine Learning
- CS598PS - Machine Learning for Signal Processing
- ECE 549 - Computer Vision

### Robotics

- ECE 470 - Introduction to Robotics
- ECE 498SM - Principles of Safe Autonomy

**Signal Processing**

- ECE 210 - Analog Signal Processing
- ECE 310 - Digital Signal Processing
- ECE 417 - Multimedia Signal Processing
- ECE 418 - Image  Video Signal Processing
- ECE 598PS - Machine Learning for Signal Processing

**Theory**

- ECE 374 - Introduction to Algorithms  Models of Computation
- ECE 534 - Random Processes
- ECE 515 - Control System Theory  Design

## HONORS AND AWARDS

**Harold L. Olesen Undergraduate Teaching Award** Fall 2019

- Awarded to graduate students to recognize an outstanding effort in undergraduate teaching.
- Nominations are done by undergraduate students and reviewed by a committee comprised of the Student Advisory Committee and the Teaching Evaluation and Awards Committee.

**Dean's List** 2016 - 2018

- Awarded to students who are in the top 20% of their college class.

**James Scholar Honors Program** 2016 - 2019

## TECHNICAL SKILLS

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|---|---|
| **Computer Languages** | Python, JAVA, C, C++, Javascript |
| **Packages** | PyTorch, scikit-learn |
| **Tools** | Git, SVN, Vim |
| **Software** | Matlab, Latex |