

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: 3.72

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., **A. Hasan**, 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.

Way-finding for the Visually Impaired

2021 - Present

- Building a robot way-finding assistant to aid visually impaired persons in navigating new indoor environments.

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

Google LLC

Software Engineering Intern

May 2021 - August 2021

Mountain View, CA

- Experimented with Pre-Training Multi-Modal BERT on unlabeled data to improve performance in extracting business titles from images
- Pre-processed data and created labels for custom pre-training tasks
- Analyzed the effect of pre-training using metrics such as train data size, training time, and improvement in precision-recall on the fine-tuning task
- Culture Contribution: Organized an event for all interns to make memes on Memegen on International Intern Day

Planbook Innovation Inc.

Full Stack Web Development Intern

May 2016 - August 2016

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 - May 2021

- 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. Also nominated for Fall 2020 and Spring 2021.

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

- 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

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