

Abhinav Kumar

Undergraduate Student

Computer science undergraduate student interested in artificial intelligence, robotics, and ethics

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EDUCATION

Computer Science with focus on Intelligence and Modeling/Simulation

Georgia Institute of Technology, Atlanta GA

08/2017 - 12/2021

4.00

Courses:

- Deep Learning
- Intro to AI
- Robotics and Ethics
- Computer Vision
- Technical Communication
- Intro to Robotics

WORK EXPERIENCE

Ethics and Emerging Military Technology (EEMT) Intern

United States Naval War College

05/2021 - Present

Achievements/Tasks

- Auditing EL730 (Ethics of Technology: Warfare, Society, and Disruptive Technologies)
- Conducting research and attending various seminars relating to ethics and advanced technology

Undergraduate Research Assistant

Georgia Tech Laboratory for Intelligent Decision and Autonomous Robots

08/2020 - Present

Achievements/Tasks

- Conducting research using reinforcement learning techniques to improve trajectory optimization for robotic locomotion in situations with contact
- Using PyTorch, PyDrake, and PyBullet
- Received Georgia Tech President's Undergraduate Research Award

Intern

NASA

01/2020 - 08/2020

Achievements/Tasks

- Implemented transfer learning pipeline using BERT and PyTorch to extract keywords from scientific publications
- Implemented module to crawl through Wikipedia articles and apply TextRank analysis to extract keywords from a Wikipedia subgraph
- Presented poster based on work at AGU Fall 2020
- Writing research publication connected to this work

Undergraduate Research Assistant

Georgia Tech Machine Learning and Perception Lab

08/2019 - 08/2020

Achievements/Tasks

- Worked on research project combining symbolic representations and deep learning for automating solving of math problems
- Helped to develop approach as well as implemented associated code
- Used PyTorch to create library and testing framework
- Continued similar work with former members of the lab, leading to publication and oral presentation at EMNLP 2021

SKILLS

Python	●	●	●	●	●
Machine Learning	●	●	●	●	●
Research	●	●	●	●	○
Data Analysis	●	●	●	●	○
Communication/Public Speaking	●	●	●	●	○
Project Management	●	●	●	○	○

OTHER PROJECTS

Intelligent Network Collision Avoidance (01/2019 - 04/2019)

- Developed a testing framework as part of a Vertically Integrated Project team for evaluating different strategies for avoiding collisions on a wi-fi network. Implemented exponential back-off and Deep Q Network models using Keras

ORGANIZATIONS

HackGT/Hexlabs (12/2018 - 12/2020)

Event Organizer/Technology Project Leader: Led implementation and improvement of multiple NLP and machine learning based engineering systems

AWARDS/OTHER

Paper accepted at EMNLP 2021 for Oral Presentation

"How much coffee was consumed during EMNLP 2019? Fermi Problems: A New Reasoning Challenge for AI"

Georgia Tech President's Undergraduate Research Award - Fall 2021

Research salary award

National Geospatial Intelligence Agency Internship with TS-SCI Clearance - Summer 2020

Selected and received clearance, but internship was canceled due to COVID-19

LANGUAGES

English <i>Native or Bilingual Proficiency</i>	Tamil <i>Native or Bilingual Proficiency</i>
Hindi <i>Professional Working Proficiency</i>	Spanish <i>Limited Working Proficiency</i>

INTERESTS

- Robotics
- Public policy
- Ethics
- Deep Learning
- Artificial Intelligence
- National Security