

# Abhinav Kumar

## Undergraduate Student

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

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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 (IP: In Progress)

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

## WORK EXPERIENCE

### Ethics and Emerging Military Technology (EEMT) Intern

United States Naval War College

05/2021 - Present

Achievements/Tasks

- Audited EL730 (Ethics of Technology: Warfare, Society, and Disruptive Technologies)
- Conducted research and attended 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

- Working on 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
- Working on 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 at EMNLP

## SKILLS

Python



Machine Learning



Data Analysis



Research



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

Research Paper accepted at EMNLP 2021

"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

Native or Bilingual Proficiency

Tamil

Native or Bilingual Proficiency

Hindi

Professional Working Proficiency

Spanish

Limited Working Proficiency

## INTERESTS

Public Policy

Ethics

Deep Learning

Robotics

Reinforcement Learning

Artificial Intelligence

Space Exploration