

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

- Auditing EL730 (Ethics of Technology: Warfare, Society, and Disruptive Technologies)
- Conducting 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

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

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