

Neeloy Chakraborty

5557 Cottonport Dr, Brentwood, TN 37027 • (412) – 606 – 8494 • neeloyc2@illinois.edu • <https://theneeloy.github.io/>

Goal: Pursuing career advancement in the field of human-centered autonomy.

Education:

- **University of Illinois at Urbana Champaign** Exp. May 2021
Bachelor of Science in Computer Engineering, Minor in Computational Science & Engineering GPA 3.68/4.00
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Publications:

- S. Liu*, P. Chang*, **N. Chakraborty**, K. Driggs-Campbell, "Decentralized Vision-Based Robot Crowd Navigation" ICRA 2021
In preparation for IEEE International Conference on Robotics and Automation (ICRA), 2021.
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Research Projects:

- **Multi-Agent Reinforcement Learning Approach to Heist-like Environments (Undergrad Thesis)** Fall 2020 –
Advisor: Professor Katie Driggs-Campbell University of Illinois
Developing MARL framework to train agents to collaborate in a simulated environment with sparse rewards.
 - **Decentralized Vision-Based Robot Crowd Navigation** Fall 2019 –
Advisor: Professor Katie Driggs-Campbell University of Illinois
Training a robot to reach a goal state while avoiding colliding with other agents, in a partially observable setting.
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Teaching Experience:

- **Undergraduate Course Assistant for Digital Systems Laboratory (ECE 385)** Aug 2019 –
Providing impactful assistance to students on TTL & System Verilog hardware labs University of Illinois
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Industry Experience:

- **Interim Engineering Intern in Global CAD at Qualcomm** Summer 2020
Building generalized data gathering solutions to support Design for Test pipeline
Leading design process of base framework for data gathering tool
Collaborating and adapting with international teams to consider multiple perspectives
Qualcomm
 - **Global Management Trainee Intern in Solutions at Anheuser Busch** Summer 2019
Implementing short- and long-term process solutions leveraging technology with an annual ROI of \$1.5M
Identifying root causes of multi-million-dollar annual problem via Six Sigma LEAN exercises
Pitching solutions to multidisciplinary teams in the People department including Managers & Directors
Anheuser Busch
 - **Global Management Trainee Intern in Logistics at Anheuser Busch** Summer 2018
Increasing productivity of critical decision-making team by developing clear visualizations
Creating effective data visualizations through Qlik Sense and SQL databases
Connecting with multidisciplinary logistics teams and interns
Anheuser Busch
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Additional Projects:

- **Efficient FPGA Smart Home Security Camera System (Project Watchdog)** Apr 2019 – Oct 2019
Leading hardware design of accelerated IoT security system
Regional Finalist in InnovateFPGA 2019
Student Group Project

- **Brain Computer Interface Platform for IoT Applications (Project HackMe)** Feb 2019
Leading data analytics and storage team Student Group Project
HackIllinois 2019 Runner-up and Sponsor Award Winners
 - **Human Interactive Balancing Security Robot (Project at Carnegie Mellon University)** Aug 2016 – Jun 2017
Advisor: Dr. George Kantor Carnegie Mellon University
Engineering a human interactive segway security robot to roam halls of institution for safety
 - **Robotics Project at ZeGoBeast LLC Pittsburgh** May 2016 – Jun 2017
Advisors: Mr. Daniel Goncharov and Mr. Alex Thomson ZeGoBeast LLC Pittsburgh
Building & improving the ZeGoBeast Electric robot and presenting final work at New York Maker Faire
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Coursework:

- **Artificial Intelligence**
 - **Intro to Artificial Intelligence** search, classification, natural language understanding, computer vision, robotics
 - **Intro to Deep Learning** linear classifiers, multi-layer networks, CNNs, RNNs, generative networks, deep RL
 - **Intro to Reinforcement Learning** RL foundations, model-free, policy gradient methods, exploration/exploitation
 - **Robotics**
 - **Intro to Robotics** robot fundamentals, rigid motion, forward/inverse kinematics, motion planning, control, vision
 - **Human-Centered Robotics** graduate course focusing on tools to design robots that interact with people safely
 - **Hardware/Software Systems**
 - **Digital Systems Lab** logic types, storage, I/O, design tradeoffs, FPGAs, microprocessor design
 - **Computer Systems Engineering** operating system design, I/O, synchronization, interrupts, virtualization
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Organizations & Extracurriculars:

- **Eta Kappa Nu (HKN): Electrical Engineering Honor Society** Aug 2019 –
Dedicated to serving the ECE & Engineering student body by providing services to help students succeed Member
Holding course review sessions and sharing university experience with other students
 - **iRobotics Combotics & Projects Student Organization** Aug 2017 – May 2018
Collaborated on the mechanical design team by developing CAD designs that model the real robot Member
Considering strengths & weakness and identifying revisions to be made to mitigate damage
 - **Children's Library of Pittsburgh** Jun 2012 – Jun 2017
Shelved, counted, & organized books in the Children's section of the Main Library Volunteer
Supported in the planning & development of tech programs to introduce children to programming
 - **Susan G. Komen Pittsburgh Race for the Cure** Sep 2010 – Sep 2016
Volunteering at multiple booths on race day Volunteer
Connecting with and learning from incredibly strong people supporting Cancer research
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Skills & Honors:

- **Languages:**
Python, C/C++, x86 Assembly, System Verilog, Java
- **Soft Skills:**
Innovative, Leader, Adaptable, Collaborative, Open
- **Tools:**
PyTorch, TensorFlow, Git, ROS, OpenCV, Altera FPGAs
- **Honors:**
Dean's List, AB GMT Scholarship, James Scholar Honors, HKN Honors Society, Carson Scholar