Neeloy Chakraborty

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Goal: Pursuing graduate education & full-time opportunities 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
  - Eta Kappa Nu Honors Society (HKN) & James Scholars Honors

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.

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.

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

Industry Experience:

- **Interim Engineering Intern in Global CAD at Qualcomm** — Summer 2020
  Building generalized data gathering solutions to support Design for Test pipeline — Qualcomm
  - Leading design process of base framework for data gathering tool
  - Collaborating and adapting with international teams to consider multiple perspectives

- **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 — Anheuser Busch
  - 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

- **Global Management Trainee Intern in Logistics at Anheuser Busch** — Summer 2018
  Increasing productivity of critical decision-making team by developing clear visualizations — Anheuser Busch
  - Creating effective data visualizations through Qlik Sense and SQL databases
  - Collaborating with multidisciplinary logistics teams and interns

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 (HackIllinois 2019 Runner-up and Sponsor Award Winners)   Student Group Project

- **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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Languages: Python, C/C++, x86 Assembly, System Verilog, Java

Tools: PyTorch, TensorFlow, Git, Raspberry Pi, ROS, OpenCV, Altera FPGAs & Quartus Prime, Autodesk Fusion 360

Soft Skills: Innovative, Leader, Responsible, Adaptable, Collaborative, Open-minded, Persistent

Honors: Dean's List, Anheuser Busch GMT Scholarship, James Scholar Honors, Eta Kappa Nu Honors Society