

Arinah Karim

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EDUCATION AND AWARDS

Indiana University, School of Informatics, Computing, and Engineering – Bloomington, IN May 2023
Bachelor of Science in Computer Science | **Major:** Computer Science | **Specialization:** Artificial Intelligence GPA: 3.69/4.00

Minor: Human-Centered Computing | Cognitive Science

Best Student Design Competition CREATIVITY – HRI Conference 2021

Feb. 2021

- Awarded for design and creation of robot prototype Crunchy: Personal Popcorn ‘Corn’panion

Dean’s List

- Recipient for maintaining 3.7+ GPA for 5 semesters of 7 completed semesters

TECHNICAL SKILLS

Languages: Java | Python | PostgreSQL | C++ | HTML | CSS | C | R | JavaScript | TypeScript

Operating Systems: Microsoft Windows | Linux

Miscellaneous: Back-End | Full-Stack | Machine Learning | JUnit | Relational Databases | Git | Kanban | Jira | BitBucket | APIs | Postman

EXPERIENCE

Robot-House Human Robot Interaction Lab – Bloomington, IN

Jun. 2020 – Present

Undergraduate Research Assistant

- Research facial cues and physiological arousal during human-robot interaction to better influence behavior tree decisions
- Outline and craft original human-robot activities that incorporate Honda Research Institute’s Haru tabletop robot for older adults with dementia and preschoolers in a local assisted living facility
- Utilizing ROS to implement computer vision algorithm for facial recognition and body orientation estimation to better observe human-robot interactions with Haru

Relativity – Chicago, IL

May 2022 – Aug. 2022

Software Engineer Intern

- Created designs for new button and modal using JavaScript, TypeScript, and HTML and deployed to production within 1 week of receiving task
- Fabricated accessible NuGet package for general query-making to collect information from New Relic Dashboard
- Resolved 87.5% of desired features in epic in collaboration with other team intern as well as other teams across the company

Center of Excellence for Women and Technology – Bloomington, IN

Aug. 2021 – May 2022

Ethical AI Team Intern

- Assisted in creating foundation for brand new team through marketing and networking with other college organizations
- Constructed well-versed resource guide to assist community in becoming familiarized with artificial intelligence and its uses
- Orchestrated and led various educational events relating to artificial intelligence and ethics in technology to promote awareness and understanding of existing technologies and benefits and issues

PROJECTS

Kaggle’s Spaceship Titanic

Apr. 2022 – May 2022

R, RStudio

- Discovered hidden correlations by cleaning given dataset to determine if a passenger was transported or not
- Implemented logistic regression for binary classification with cleaned dataset and reached an accuracy rate of 75.03%
- Compared 2 RandomForest models and achieved 75.39% accuracy for model with cleaned data and 79.88% for model with raw data

Optical Mark Recognition

Feb. 2022 – Mar. 2022

Python, PyCharm, Git

- Produced a computer vision system to produce a 70% accurate symbolic representation of music sheet in respective clefs
- Explored and implemented computer vision topics such as cross-correlation, convolution, Hough space, and Sobel operator
- Worked collaboratively on a 3-person team and led project to complete assignment prior to deadline

Autonomous Robotic Hand

Nov. 2021 – Dec. 2021

C, RobotC

- Devised and collaborated on the creation of an autonomous robotic hand with the ability of lifting lightly weighted objects
- Traded speed for stability for robot to successfully lift objects within a range of 18 centimeters to 33 centimeters away
- Utilized linear regression to accurately predict the desired shoulder and elbow positions to grab an object given the object’s distance

Light-Seeking Plant Robot

Nov. 2021 – Dec. 2021

C++, Arduino

- Formulated and designed autonomous robot to search and find brightest light source to assist plant in receiving more sunlight
- Constructed enclosure, body, and code for robot
- Optimized search algorithm to decrease robot search time for sunlight from quadratic to $n \log(n)$ time

Snake AI

Apr. 2021 – May 2021

Python, PyCharm, Git

- Constructed a Snake AI agent to learn the rules of Snake through QLearning to find optimal path to food
- Used PyGame to initialize game board and Pickle to store optimal moves in a text file
- Observed performance of QLearning algorithm by comparing it to BFS search algorithm