# Rushiv Arora

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www.linkedin.com/in/rushiv-arora

## Research Interests

Reinforcement Learning - Hierarchical and Model-Based, Machine Learning, Algorithms

## Education

**University of Massachusetts Amherst**                                                                    *Dec 2022*
*M.S. in Computer Science,* **GPA: 4.0**
Supported by Bay State Fellowship

**University of Massachusetts Amherst**                                                                    *May 2021*
*B.S. in Computer Science,* **GPA: 3.975**
Thesis: Machine Learning and Path Optimisation Algorithms for Autonomous Drones
CICs Outstanding Undergraduate Award (link)

**University of Massachusetts Amherst**                                                                    *May 2021*
*B.S. in Computer Engineering,* **GPA: 3.975**
Member of Commonwealth Honors College
ECE Award of Excellence

## Honors and Grants

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| **Bay State Fellow, College of Information and Computer Science** | *May. 2021* |
| **CICS Outstanding Undergraduate Award (link):** Highest award for CS undergraduates | *May. 2021* |
| **ECE Award of Excellence:** Highest award for ECE undergraduates | *May. 2021* |
| **Commonwealth Honors Research Grant**: $ 1,000 (Highest of the year) | *Sep. 2020* |
| **University of Massachusetts Amherst Chancellor's Award:** $ 14,000/year | *May '17 - Present* |
| **Dean's List** | *2017 - 2021* |
| **Award for Excellence in Computer Science, Mathematics & Physics** | *May '15, May '17* |

## Research Experience

**BiNDS Lab, UMass Amherst CICS**                                                                    *May. '21 - Present*
*Graduate Research Assistant*
   - Advised by Professor Hava Siegelmann

**College of Engineering, UMass Amherst**                                                            *Mar. '19 - May '21*
*Undergraduate Researcher*
   - Advised by Professor Hossein Pishro-Nik
   - Thesis/Project: Machine Learning, Autonomous Drones, Algorithms for Autonomy

**Office of the Global CTO, Dell Technologies** *Jun. '20 - Jul '20*

*Advanced Hardware Research Intern*
- Advised by Michael Healy, Mike Robillard
- Project I: Research oneAPI and Heterogeneous Computing
- Project II: Self-driving cars on Edge
- Project III: Benchmarks in Machine Learning performance

## Work Experience

**CICS Advising Center, UMass Amherst** *Sep. '19 - Present*

*Academic Peer Advisor*
- Advised by Alicia Clemente, Laura Melbin

**New York Stem Cell Foundation Research Institute** *Jun. '20 - Aug. '20*

*Software Engineering Intern*
- Advised by Sean DesMarteau, Daniel Paull
- Projects: Code Migration and Web Applications for Array Team

## Teaching Experience

**M5 ECE Makerspace, UMass Amherst** *Fall '18, Fall '19*

*Undergraduate Instructional Assistant*
- Advised by Professor Baird Soules
- Primary Responsibilities: Supervising Design Projects, Planning Labs, Teaching Content.

**CICS, UMass Amherst** *Spring '19*

*Undergraduate Teaching Assistant*
- Course: CS 220 - Programming Methodology
- Primary Responsibilities: Holding Office hours, Proctoring and Grading

## Leadership Experience

**Senior Design, UMass Amherst** *Aug. '20 - Present*

*Team Leader*
- Advised by Professor Dennis Goeckel
- Primary Responsibilities: Responsible for technical integration and making all technical decisions. Working on Cloud, Bluetooth, and Hardware aspects of the project.

## Service

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| **UMass CICS College Outstanding Teacher Award** | *2021* |
| **UMass Commencement Student Speaker Selection** | *2021* |

## Relevant Coursework

**Graduate Courses:** Machine Learning, Reinforcement Learning, Probabilistic Graphical Models, Neural Networks and NeuroDynamics, Natural Language Processing, Algorithms in Data Science, Quantum Computing, Data Visualization and Exploration, Research Methods in Empirical Computer Science

**Undergraduate Courses:** Artificial Intelligence, Algorithms, Introduction to Computation, Computer Architecture, Security Engineering, Systems and Networking, Embedded System I & II

## Publications

**Model-Based Reinforcement Learning with SINDy**                                                    *2022*
*Rushiv Arora, Eliot Moss, Bruno Castro da Silva*
DARL Workshop @ The Thirty-ninth International Conference on Machine Learning

**A Search and Detection UAV System: from Design to Implementation (In Submission)**    *2021*
*Mohammadjavad Khosravi, Rushiv Arora, Saeede Ennayti, Hossein Pishro-Nik*

## References

**Professor Bruno Castro da Silva**
*Assistant Professor, Co-Director of the Autonomous Learning Lab*
bsilva@cs.umass.edu

**Professor William Leonard**
*Undergraduate Program Director, UMass Amherst College of Engineering*
leonard@ecs.umass.edu, (413) 545-3513

**Michael Robillard**
*Senior Director/Senior Distinguished Engineer, Dell Technologies*
Michael.Robillard@dell.com, (508) 335-9543

**Mike Healy**
*Senior Principal Engineer Technologist-Distinguished Member, Dell Technologies*
Mike.Healy@dell.com, (617) 797-4052

## Skills

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| **Programming** | Python, Java, Javascript, C, C++, Matlab, Obj-C, Swift, & counting |
| **Machine Learning Frameworks** | TensorFlow, PyTorch, Scikit-Learn, Caffe, Keras |
| **Heterogeneous Computing** | SYCL, Data Parallel C++, Intel oneAPI, CUDA |
| **Microprocessors/Microcontrollers** | x86, ARM, AVR, NIOS, RPi |

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| **Software Development** | Angular, React, ExpressJS, NodeJS, .net, iOS Swift/SwiftUI, Postman |
| **Cloud Computing** | AWS, Microsoft Azure |
| **Engineering Tools** | Qiskit, PSPICE, Altium, Verilog |
| **Version Control** | Git |
| **Miscellaneous** | Public Speaking, Communication, Presenting |

## Special Skills

**NAUI Certified Advanced Diver**
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