

## Nicholas Ceccarelli

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### EDUCATION

University at Buffalo, The State University of New York	Expected Spring 2021
<i>Bachelor of Science, <b>Computer Science</b>, Artificial Intelligence Focus</i>	GPA: 3.97/4.00
<i>Bachelor of Arts, <b>Mathematics</b></i>	
Lorenzo di Medici International Institute	Winter 2019
<i>Study Abroad Experience in Florence, Italy</i>	

### WORK EXPERIENCE

CyberMed Research Lab, <i>Undergraduate Researcher</i>	Winter 2020 – Present
<ul style="list-style-type: none"><li>- Utilize a ResNet deep neural network to give a preliminary respiratory illness diagnosis</li><li>- Engineer audio files to spectrograms for use with ResNet network</li></ul>	
CytoCybernetics Inc., <i>Software Engineering Intern</i>	Fall 2019 – Present
<ul style="list-style-type: none"><li>- Design, debug, and test software applications used in biological research</li><li>- Implement algebraic and differential equations in Python for both analytical and numerical results</li></ul>	
CSE 220: Systems Programming, <i>Teaching Assistant</i>	Fall 2019 - Present
<ul style="list-style-type: none"><li>- Teach laboratory and recitation session</li><li>- Host office hours to assist students</li><li>- Present new ideas for the course in weekly meetings</li></ul>	
Distributed Robotics and Networked Embedded Systems Lab, <i>Undergraduate Researcher</i>	Spring 2018 – Fall 2020
<ul style="list-style-type: none"><li>- Used an Arduino and the Twitter API to read and display Tweets that fit certain requirements</li><li>- Summer 2018 Research Experience for Undergraduate Students program participant</li><li>- Presented progress at daily standup meetings</li></ul>	
NSF-funded REU at the University of Nevada, Reno, <i>Undergraduate Researcher</i>	Summer 2019
<ul style="list-style-type: none"><li>- Performed a literature review about genetic algorithms and temporary networks of drones</li><li>- Created an algorithm to find optimal placement of UAV access points for a temporary network</li><li>- Articulated the project in an academic paper which was accepted by the IEEE WOCN 2020 conference</li><li>- Presented paper at The 2020 Wireless and Optical Communications Conference (WOCN 2020)</li></ul>	

### TECHNICAL SKILLS

C++	Java	Android Development	Git/GitHub	Microsoft Word
C	JavaScript	LaTeX	Linux OS	Microsoft Excel
Python	HTML	MySQL	Bash	Microsoft PowerPoint

### ACCOMPLISHMENTS

Engineering Honor Society	Dean's List	AP Scholar with Distinction
Presidential Scholarship	Grace W. Capen Scholar	WNY Scholar Athlete

### PROGRAMMING PROJECTS

On-Campus Event Manager Android Application	Spring 2020
<ul style="list-style-type: none"><li>- Worked on a team of three to design a self-contained way to manage, display, and check into events</li><li>- Designed the UX for upcoming events, check in, and event creation pages</li><li>- Utilized XML for front end, Java for backend, and MySQL for database</li></ul>	
Optimal UAV Positioning for a Temporary Network Using an Iterative Genetic Algorithm	Summer 2019
<ul style="list-style-type: none"><li>- Researched pros and cons of resources used by similar projects</li><li>- Created a system to generate optimal positioning for drones to cover a map of users using a drone swarm<ul style="list-style-type: none"><li>- Used genetic algorithms, mathematical calculations, and the concepts of transfer learning</li></ul></li><li>- Performed testing and validation against previously existing solutions</li></ul>	
C-Standard Compliant Memory Allocator	Spring 2019
<ul style="list-style-type: none"><li>- Implemented <code>malloc()</code>, <code>calloc()</code>, <code>realloc()</code>, and <code>free()</code> for the C programming language</li><li>- Utilized a multi-pool approach for small allocations and a bulk approach for large allocations</li><li>- This implementation can be used to run single-threaded programs</li></ul>	

### LEADERSHIP/CO-CURRICULAR EXPERIENCES

Honors Student Council, <i>Treasurer</i>	Fall 2019 - Present
<ul style="list-style-type: none"><li>- Plan social and volunteering events for students</li><li>- Manage Honors Student Council funds</li></ul>	
UB Association for Computing Machinery, <i>Member</i>	Spring 2018 - Present
University Heights Tool Library, <i>Volunteer</i>	Spring 2018
Honors Mentoring Program, <i>Mentor</i>	Fall 2018 - Present
<ul style="list-style-type: none"><li>- Assist students with the transition from high school to college</li><li>- Answer questions about UB</li></ul>	
Intramural Soccer and Volleyball, <i>Participant</i>	Fall 2017 - Present
UB Symphonic Orchestra, <i>Principal Bassist</i>	Fall 2017 - Present