Nicholas Ceccarelli

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EDUCATION

University at Buffalo, The State University of New York — Expected Spring 2021
Bachelor of Science, ***Computer Science****, Artificial Intelligence Focus* — GPA: 3.97/4.00
Bachelor of Arts, ***Mathematics***

Lorenzo di Medici International Institute — Winter 2019
Study Abroad Experience in Florence, Italy

WORK EXPERIENCE

CyberMed Research Lab, *Undergraduate Researcher* — Winter 2020 – Present
- Utilize a ResNet deep neural network to give a preliminary respiratory illness diagnosis
- Engineer audio files to spectrograms for use with ResNet network

CytoCybernetics Inc., *Software Engineering Intern* — Fall 2019 – Present
- Design, debug, and test software applications used in biological research
- Implement algebraic and differential equations in Python for both analytical and numerical results

CSE 220: Systems Programing, *Teaching Assistant* — Fall 2019 - Present
- Teach laboratory and recitation session
- Host office hours to assist students
- Present new ideas for the course in weekly meetings

Distributed Robotics and Networked Embedded Systems Lab, *Undergraduate Researcher* — Spring 2018 – Fall 2020
- Used an Arduino and the Twitter API to read and display Tweets that fit certain requirements
- Summer 2018 Research Experience for Undergraduate Students program participant
- Presented progress at daily standup meetings

NSF-funded REU at the University of Nevada, Reno, *Undergraduate Researcher* — Summer 2019
- Performed a literature review about genetic algorithms and temporary networks of drones
- Created an algorithm to find optimal placement of UAV access points for a temporary network
- Articulated the project in an academic paper which was accepted by the IEEE WOCC 2020 conference
  - Paper accepted into The 2020 Wireless and Optical Communications Conference (WOCC 2020)
- Presented findings at a symposium at University of Nevada, Reno

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
- Worked on a team of three to design a self-contained way to manage, display, and check into events
- Designed the UX for upcoming events, check in, and event creation pages
- Utilized XML for front end, Java for backend, and MySQL for database

Optimal UAV Positioning for a Temporary Network Using an Iterative Genetic Algorithm — Summer 2019
- Researched pros and cons of resources used by similar projects
- Created a system to generate optimal positioning for drones to cover a map of users using a drone swarm
  - Used genetic algorithms, mathematical calculations, and the concepts of transfer learning
- Performed testing and validation against previously existing solutions

C-Standard Compliant Memory Allocator — Spring 2019
- Implemented `malloc()`, `calloc()`, `realloc()`, and `free()` for the C programming language
- Utilized a multi-pool approach for small allocations and a bulk approach for large allocations
- This implementation can be used to run single-threaded programs

LEADERSHIP/CO-CURRICULAR EXPERIENCES

Honors Student Council, *Treasurer* — Fall 2019 - Present
- Plan social and volunteering events for students
- Manage Honors Student Council funds

UB Association for Computing Machinery, *Member* — Spring 2018 - Present

University Heights Tool Library, *Volunteer* — Spring 2018

Honors Mentoring Program, *Mentor* — Fall 2018 - Present
- Assist students with the transition from high school to college
- Answer questions about UB

Intramural Soccer and Volleyball, *Participant* — Fall 2017 - Present

UB Symphonic Orchestra, *Principal Bassist* — Fall 2017 - Present