

# Tanner Hoelzel

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## EDUCATION

### Binghamton University, State University of New York

December 2019

Bachelor of Science in Computer Science, Watson School of Engineering

Bachelor of Arts in Mathematical Sciences, Harpur College of Arts and Sciences

Overall GPA: **3.21/4.00**, Dean's List: Fall 2018 - Fall 2019

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## TECHNICAL SKILLS

- **Languages:** C++, C, Scheme, Emacs lisp
  - **Software:** Emacs, Git, Vim
  - **Coursework:** Compilers, Programming Languages, Number Theory, Combinatorics
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## RELEVANT EXPERIENCE

### Siege Technologies, Rome NY

May 2018 - Aug 2018

#### *Kernel Team Intern*

- Led development of automated tool for complete reverse engineering of linux kernel security feature
- Adapted state-of-the-art hardware attacks to new SoCs based on the latest proofs-of-concept
- Augmented in-house tools alongside team and integrated changes to collaborative git repository

### Technical University of Cologne, Cologne Germany

May 2017 - Aug 2017

#### *Motion Capture Researcher*

- Implemented Kalman filter in C# to smooth noisy motion capture data for real-time animation
- Designed various position- and orientation-estimation models in Unity 3D
- Balanced estimation accuracy with complexity to optimize performance in real-time VR environment

### Gesture Recognition Research, Binghamton University

Sep 2015 - Feb 2017

#### *American Sign Language Recognition Researcher*

- Published computer vision paper on state-of-the-art sign language recognition at ICIP 2017
- Optimized an open-source C++ random regression forest for gesture classification
- Developed novel features with WEKA to achieve maximum classification accuracy on ASL alphabet
- Collected hand pose data from fluent speakers using Leap Motion and Xbox Kinect

### XVIVO Scientific Animation, Wethersfield CT

May 2016 - Aug 2016

#### *Virtual Reality and 3D Design Intern*

- Led technical development of touchscreen application alongside lead animator
  - Replicated an existing VR app to demonstrate feasibility of in-house VR development
  - Established library of VR projects for the Samsung Gear using C# with Unity
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## LEADERSHIP

### Residential Life, Binghamton University

Aug 2016 - Jan 2018

#### *Resident Assistant in STEAM Learning Community*

- Led outings to tech hubs including Cornell's CESR and a local hackerspace
- Organized interactive demo booth at local STEM fair for young women interested in tech
- Hosted exam tutoring sessions for residents in linear algebra, calculus and number systems

### ACM Binghamton University Chapter, Binghamton University

Sep 2015 - May 2017

#### *ICPC 2016 Competitor*

- Ranked 24/48 with Binghamton invitational team at NY Regional Collegiate Programming Competition
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## INTERESTS

- Hiked 600 miles on the Appalachian Trail from Georgia to Virginia in Spring 2018