# Mitchell H. Baller

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## Education

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| M.S in Computer Science, Georgia Institute of Technology | August 2021 - December 2023 |

Computational Perception and Robotics Concentration

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| B.S. in Computer Science, Case Western Reserve University | August 2013 - May 2017 |

## Experience

**Circle Optics**, Rochester, NY — May 2022 - Present
Software Engineering Co-op – Computer Vision
- Wrote algorithm for focusing a novel lens assembly by evaluating captured images of MTF targets in Python and C++
- Benchmarked and evaluated vendor camera sensors and SDKs for new product lines using custom software suite
- Researched and implemented state of the art Detect and Avoid algorithms leveraging CUDA with proprietary camera system
- Developing method for calibrating telescope assembly at short range
- Writing REST API with Rust for controlling camera system and monitoring temperatures and alerts

**Eaton Corporation**, Cleveland, OH — July 2019 - August 2021
Software Engineer
- Rewrote in-house pay statement application to support divesting employees and provide uninterrupted access to pay info
- Modernized SDLC with a testing suite, automated deployment with Jenkins and migration to Bitbucket and Git
- Automated scorecard metric collection for weekly platform scorecards with Python, shell scripts and AppPulse's open API
- Wrote software for 3 sprint teams. Bugfixes and features in Java and JavaScript to Oracle and Adobe platforms
- 1st place in internal hackathon to prototype machine power draw monitoring and supervisor alert system

**Eaton Corporation,** Cleveland, OH — July 2017 - July 2019
IT Functional Analyst, Project Manager in Leadership Development Program (LDP)
- Led contact center reporting refresh during platform upgrade to improve dashboard and metric effectiveness
- Deployed, configured, and led testing for 22 Cisco contact centers in the US, Europe, and Asia
- Nominated to be campus recruiter, manager for summer intern and mentor for first year LDP

**Eaton Corporation,** Pittsburgh, PA — May 2016 - August 2016
Summer IT Intern
- Led Windows 10 compatibility testing for over 400 manufacturing plant applications
- Designed and implemented physical plant inventory scheduling tool using Visual Basic still in use 6 years later

**Texas Tech University Department of Computer Science**, Lubbock, TX — May 2015 - August 2015
Researcher, NSF Research Experience for Undergraduates Summer Program
- Storing and querying large network traffic datasets with Apache Hive in order to predict network attacks
- 200-400% speed improvement measured with Apache Hadoop vs Apache Hive, SQL vs Wireshark
- Proposal presentation, progress reports, and poster session to lab mentor, graduate students and professors

## Relevant Coursework

**Computational Photography and Computer Vision**
- Implemented Seam carving for content-aware image resizing, Object removal by Exemplar-Based Inpainting
- Project work in video texture analysis, High Dynamic Range (HDR), Panorama stitching, and pyramid blending
- Image compression with discrete Fourier transform, object detection with Harris corners, Optical flow analysis
- Coursework implemented in Python using OpenCV, Numpy, Scipy, Pytorch etc.

**Operating Systems and Advanced Operating Systems**
- Built multithreaded proxy server, multithreaded get file server and distributed file system with C and C++
- Coursework in processes, threads, scheduling, memory management, IPC, Virtualization, RPC

**Artificial Intelligence**
- Implemented pathfinding algorithms: BFS, UCS, A*, Bi-directional UCS, Bi-directional A* and Tri-directional UCS
- Built AI game player for skid isolation using MiniMax, Iterative deepening, alpha beta pruning