## Mitchell H. Baller

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### Education

M.S in Computer Science, Georgia Institute of Technology Computational Perception and Robotics Concentration B.S. in Computer Science, Case Western Reserve University

August 2021 - December 2023

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
- 1<sup>st</sup> 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 Al game player for skid isolation using MiniMax, Iterative deepening, alpha beta pruning