

# Nicholas (Nick) Brown

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## About Me

I have a passion for problem-solving, and enjoy feeling challenged in everyday life, learning from every experience. My love for technology supports my motivation to improve the quality life for others while developing intuition around my career.

## Education

### Bachelor of Science in Electrical Engineering

Emphasis: Lasers and Optics

Awarded: Spring 2017

#### Related Coursework:

- |                         |                            |                            |
|-------------------------|----------------------------|----------------------------|
| - Optical Electronics   | - Modern Physics           | - Problem Based Biomedical |
| - Optics and Waves      | - Quantum Mechanics        | Engineering                |
| - Biomedical Signal and | - Interferometry and Laser | - Ultrafast Optics         |
| Image Processing        | Metrology                  | - Fourier Optics           |

#### Related Lab-work:

- |                     |                      |                       |
|---------------------|----------------------|-----------------------|
| - Spectroscopy      | - Transistors Design | - Fiber-Optics Design |
| - Laser Design      | - Interferometry     | - LED Design          |
| - Radon and Fourier | - Holography         | - Spatial Filtering   |
| Transformation      | - Polarization       | - Phase Retrieval     |

### Bachelor of Science in Biomedical Engineering

Awarded: Spring 2017

## Engineering Experience

### Fourier ptychographic microscopy *Senior Design Project*:

Developed a high space-bandwidth microscope with phase retrieval using image reconstruction and data analysis; resulting in a cost efficient, high-detail, wide field-of-view image. Awarded 2nd place in Colorado State's Biomedical Engineering Senior Design Showcase 2017.

### Beating mechanism of an embryonic zebrafish heart:

Modeled an image processing procedure to formulate a theory for the mechanism that a zebrafish embryo uses to pump blood, determining a combination of peristaltic and impedance pumping.

### Effectiveness of "as seen on tv" workout equipment:

Tested the claims advertised by the Shake Weight by processing and filtering an EMG signal from human subjects, and performed statistical analysis to determine that the Shake Weight exceeded the muscle involvement of conventional dumbbell exercises.

### Failure rates of medical diagnostic equipment:

Framed a test to determine the specificity and sensitivity of a diagnostic tool. In human subjects, a fever was induced and the introduction of menthol in and around the mouth was able to introduce a failure to an oral thermometer.

## Software Experience

Exceptional in MATLAB, Microsoft Office Professional Suite, Inkscape, GIMP, Experienced in Java, C++, ImageJ, HTML, CSS, SourceTree, Azure DevOps, Mathematica, Photoshop, Illustrator, Acrobat, Final Cut Pro, and Windows, Linux, and Macintosh Operating Systems

## Employment Experience

July, 2013 - Present

### Otter Products

Consulted with innovation for product development and testing with feedback from potential consumers  
Developed aging reports to determine past due accounts as a Accounting Specialist  
Processed customer payments from large accounts, approving returns and chargebacks  
De-escalated consumers as a tier-2 consumer contact, and communicated policies through the BBB