# NISAL PERERA

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## EDUCATIONAL QUALIFICATIONS

**MSc in Applied Computing (MScAC)** September 2016-Present
University of Toronto
**Coursework** (Ongoing): Machine Learning, Computer Vision, Human Computer Interactions, Natural Language Computing

**BASc Computer Engineering (Honours)** 2011-2016
University of Toronto
**Coursework:** Algorithms and Data Structures, Operating Systems, Computer Security, Computer Organization, Computer Networks, Introduction to Databases, Web Programming

## WORK EXPERIENCE

**Mobile Lab Assistant, MADLab** 2016-Present
**University of Toronto, Toronto**

- Developed the university IT Services iOS app with system status push notifications.
- Participated in collaborative design and development of a new website for the lab.
- Provided code-level troubleshooting support to student mobile app developers.

**Teaching Assistant, Department of Computer Science** 2016-Present
**University of Toronto, Toronto**

- Conducted weekly lab sessions and graded student assignments/midterms.

**Software Engineer, Advanced Micro Devices Inc**. 2014-2015
**Display Driver Team, Markham**

- Implemented new features in C++ for Virtual Reality, Wireless and 4K display products.
- Worked closely with customers to triage and resolve Windows and Linux driver issues.
- Practiced daily SCRUM meetings and presented in weekly code review meetings.

## PROJECTS

**Hand-Written Digits Classification, Machine Learning** 2016

- Implemented k-Nearest Neighbors and Regularized Logistic Regression algorithms to classify Hand-Written Digits. Achieved 96% accuracy on test set trough logistic regression and 98% accuracy using the kNN approach.

**Image Scene Prediction, Machine Learning** 2016

- Implemented a Transfer Learning algorithm using a pre-trained Deep Convolutional Neural Network to classify 10,000 Flickr images into 8 classes. Achieved 80.6% accuracy on 2000 private test set of images.

**Automated Cell Counter, Computer Vision** 2016

- Implemented an algorithm to identify cells in a microscope image using a robust estimation. Optimized the algorithm to extract simple image models from noisy image measurements.

**Lab Resource Management System, Programming on the Web** 2016

- Frontend programed in Angular.js and Bootstrap with a responsive user interface, backend programmed in Node.js using Express framework. Used MongoDB as the backend database with Passport.js for user authentication.

**NFC Android Application, 4th Year Capstone Project** 2015

- Mobile application that allows advertisers to create and share advertisements using Near Field Communication (NFC) technology. Application also collects usage data and tracks geolocation to provide real-time feedback to advertisers.

**Orbis Challenge Hackathon, 6th Annual Orbis Challenge at U of T** 2014

- Worked in a team of two to build an AI for an arcade game within 24 hours. Used recursive algorithms to search for possible paths in a given map to beat the opposing human player.

## TECHNICAL SKILLS

- **Programming Languages:** C/C++, Java, Python, MATLAB, Node.js and Swift
- **Development Environments:** Eclipse, MS Visual Studio, PyCharm, Xcode
- **Software Versioning Tools**: Git, Perforce and SVN
- **Other Tools and Software:** Android SDK, Scikit-learn, libGDX Game Engine

## AWARDS AND SCHOLARSHIPS

- **Aspiring Engineering Scholarship,** Professional Engineers Ontario (PEO) 2011
- **Engineering Entrance Scholarship,** University of Toronto 2011

## EXTRA-CURRICULAR ACTIVITIES

- **Member,** University of Toronto Squash Club 2016-Present
- **Faculty Ambassador,** Ontario University Fair 2013-2015