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# Android Application for MNIST Handwritten Digits Classification

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## Computer and Information Science Undergraduate Project Topics and Ideas

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**Title:** Android Application for MNIST Handwritten Digits Classification

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**Difficulty:** Hard

**Specialization:** Artificial Intelligence

**If other, please specify:**

**Most Appropriate Course:** Project II

**Brief Description:** Use Neural Network architecture to classify MNIST handwritten digits dataset, student/s should implement a phone application (Android) to demonstrate their work, application will then be published to the app store for other students and CISC faculty members for evaluation and feedback.

**Number of students needed:** 2

**Outcomes and Deliverables:** Source code, project report, Android application(Working demo)

**Skills Required:** Python, Machine Learning, Android SDK.

**Program Goal:**

CISC 1.1: Mathematical Analysis

CISC 1.2: Sound Reasoning

CISC 1.3: Develop Solution

CISC 1.4: Deploy Solution

CISC 2.2: Software Platform

CISC 2.4 Data Structure

CISC 2.5 Analysis of Algorithms

**Student Learning Outcomes:**

1a: The student should be able to analyze a problem in a manner that facilitates the design of its solution.

1b: The student should be able to apply relevant principles of computing during their analysis of a problem.

2a: Student is able to create a formal software design based on a given set of requirements.

2b: Student is able to develop a software solution from a formal design specification.

2c: Student is able to evaluate a software solution to determine its compliance with the specification.

3b: Student will be able to verbally communicate effectively with an advisor, group of colleagues or an audience to express a thought or idea at a level appropriate for the desired audience.

5a: Ability to organize tasks, contribute a fair workload, and see tasks to completion.

5b: Ability to collaborate as an effective team member.

5c: Ability to manage challenges and initiate actions to solve a challenge.

6a: Student will be able to produce computer-based solutions by applying applicable computer science theory and software development fundamentals