Applied Machine Learning

Info Meeting - July 17, 1pm (01.10.011)



Paul Schmiedmayer



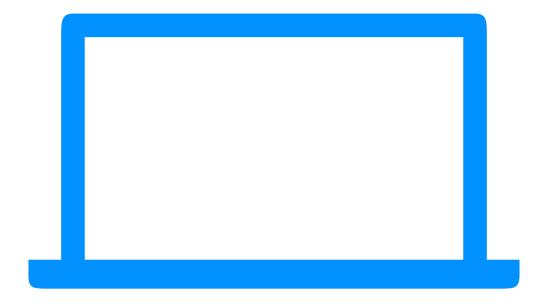
Goals

- Learn about **research techniques** and **best practices** when developing applications that use machine learning-based algorithms.
- Get familiar with tools and frameworks like Turi
 Create, TensorFlow, Keras, and Create ML
- Explore new approaches to ML tools like Swift for TensorFlow
- Focus on sustainability and privacy in the context of machine learning



Literature Research & Problem Definition





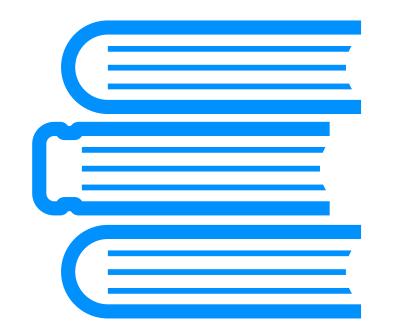


Conduct Literature Research Evaluate Approaches

Define your Area of Interest

Concept Creation

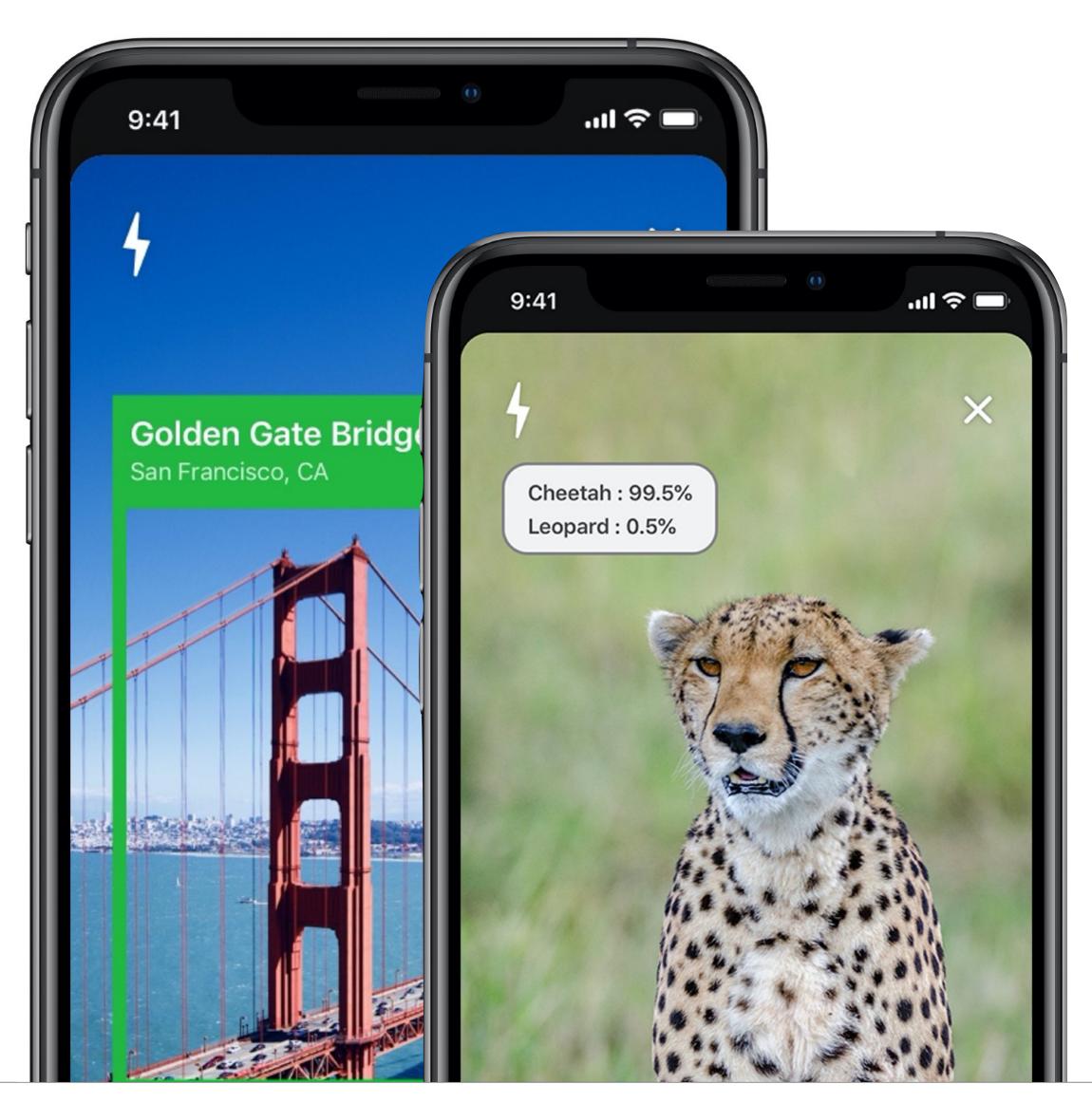
- Summarize your literature research
- Create a concept how to
 - Conduct your research based on the research you have found
 - Build a prototype showcasing your research







Prototype Creation

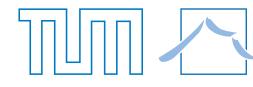


- Create a prototype that incorporates your research and showcases a possible solution
- This could be an:
 - Application
 - Website / Server
 - Framework / Tool
 - Notebook / Playground



Final Report & Final Presentation

- Seminar Report (about 6 pages + bibliography)
 - Summarizes your literature research and related work
 - Showcases your proposed solution and prototype
 - Details possible future work
- Seminar Conference:
 - Peer review a small number of your fellow students' reports and provide feedback
 - Incorporate that feedback before the final presentation



Important Dates



- Oct 21 (all day): Kickoff Day
- Tuesday, 1pm 2:30pm: Seminar Meeting
- Nov 19, 12pm 4pm: Concept Review
- Jan 19, 11:59pm: Report Submission
- Jan 26, 11:59pm: Report Review Deadline
- Feb 4, 12pm 4pm: Final Presentation

Kickoff & Guest Lectures

ML Applications in Wearables

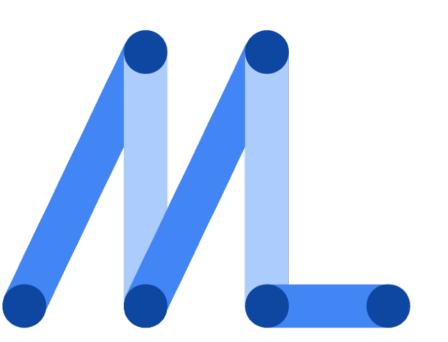














ML in Development Tools

Prerequisites

- Experience with standard programming paradigms such as object-oriented programming and functional programming
- Experience in one or more of the following programming languages: Swift, Python, C or C++
- An introductory machine learning course such as Machine Learning (IN2064) or worked with a ML library as part of a project

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angle 🗀 Landmarks 
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angle Home.swift 
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angle CategoryHor
                                    See LICENSE folder for this sample's licensing informatio
                                  10 struct CategoryHome: View {
                                         var categories: [String: [Landmark]] {
                                                 grouping: landmarkData,
                                                  by: { $0.category.rawValue }
                                          var featured: [Landmark] {
                                             landmarkData.filter { $0.isFeatured }
                                             NavigationView {
                                                     FeaturedLandmarks(landmarks: featured)
                                                          .frame(height: 200)
                                                          .clipped()
   Info.plist
                                                          .listRowInsets(EdgeInsets())
 Preview Content
Products
                                                      ForEach(categories.keys.sorted().identified(by: \.self)) { key in
Configuration
                                                         CategoryRow(categoryName: key, items: self.categories[key]!)
                                                      .listRowInsets(EdgeInsets())
   LICENSE.txt
                                                      NavigationButton(destination: LandmarkList()) {
                                                  .navigationBarTitle(Text("Featured"))
                                                      PresentationButton(destination: Text("User Profile")) {
                                                           [mage(systemName: "person.crop.circle")
                                                              .imageScale(.large)
                                                              .accessibility(label: Text("User Profile"))
                                              landmarks[0].image(forSize: 250).resizable()
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Grading



- Seminar Report: 40%
- Prototype: 25%
- Presentation: 20%
- Peer Review: 15%

Additional Requirements to pass the course: Attendance & participation in all seminar meetings

Application Process

- Fill out the form at <u>ase.in.tum.de/appliedML</u> **Due: July 24, 11:59pm**
- Log in to the <u>matching system</u> and make sure to prioritize the Applied Machine Learning Seminar Between: July 19 July 24, 11:59pm
- Check if you have been matched to the seminar From: July 30

Contact & Information



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ase.in.tum.de/schmiedmayer



Applied ML Seminar

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