**Computer Vision Project Proposal**

1. **Name, Contact info (e.g. email/phone).**

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1. **Title of the project**

Build My Own ‘Google Translate’ for Food Menus in Vietnamese

1. **High level description of the project: what question or problem are you addressing?**

Ordering food in a Vietnamese restaurant that has their menu only in Vietnamese can be a struggle, especially if you’re not familiar with the language. A study revealed specific accuracy rates for Google Translate across languages, including 94% for Spanish, 90% for Tagalog, 82.5% for Korean, 81.7% for Chinese, and 77.5% for Vietnamese (with lowest accuracy rate).

This project aims to create a highly accurate and efficient model for character recognition (Vietnamese food names) in menus at Vietnamese restaurants. To do so, I need to tap into deep learning models with my own data sets of Vietnamese food names. By training the models, I hope to automate the task of menu translations.

1. **What type of data science task is it?**

The task is a computer vision challenge to detect characters in input images (OCR), emphasizing image processing, analysis, and modern deep learning techniques.

1. **Data: Brief description of data. How big do you expect the data will be? Is amount of your data too big or too small? If you're web-scraping or collecting data, how long do you expect to collect the data?**

The dataset used in this project is TBD.

1. **How will you analyze the data? What machine learning methods do you plan to use, and/or what business intelligence aspect do you plan on incorporating?**
   * Set up: Importing necessary modules, setting hyperparameters, and constants.
   * Data loading: Loading the dataset into memory for processing.
   * Data processing: Converting raw data, including techniques like data augmentation, normalization, and resizing images.
   * Data visualization: Inspecting the dataset for insights and potential issues.
   * Model building: Constructing a model architecture using selected techniques.
   * Model predictions: Evaluating model performance on unseen data, analyzing predictions, and identifying areas for improvement.
   * Possible translation packages: I can use the googletrans package, py-translate, translators 5.9.5 and utilize its functions to translate text from images.
2. **Describe any anticipated difficulties and problems. Discuss how you may overcome the problems.**
   * Do I build my own testing and training datasets? Scraping food menus from popular websites like Yelp.
3. **Suggest a timeline for the project.  This should be a weekly breakdown of what you plan on doing each week.**
   * Week 1-2: project proposal
   * Week 3: project revisions
   * Week 4: data prepping (collecting data, data processing, data inspection)
   * Week 5-6: model building
   * Week 7: model evaluation
   * Week 8: project presentation