# Jennifer E. Yoon (U.S. Citizen)

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**Project:**

**Amazon Rainforest Deep Learning Project** **2022**

Explore ways to extend deep learning training to time periods with unlabeled data. (My ultimate goal is to help the Amazon Rainforest conservation effort by making it more profitable for locals to grow and conserve the forest than to burn it down.) Use **Google Colaboratory GPU** server with **PyTorch** and **Fastai Python** libraries. (See geo-ml repo on GitHub, https://github.com/JennEYoon/geo-ml)

Train a baseline deep learning model using ResNet34 pre-trained weights on ***labeled*** satellite image data from a **2017 Kaggle competition** and **Planet Labs**. Reached f-beta score accuracy of 92.3%. (For comparison, #1 spot in the 2017 Kaggle competition had 93.317% score). Download ***unlabeled*** satellite image data for 2017-2022 period from Planet Labs and **NICFI non-profit program**. Pre-process data by breaking images into tiles similar to labeled data. Auto-apply labels to new data using previously trained baseline model. On a subset of images, manually correct and verify labels to use as test data and training data, using AI-assisted label correction. Fine tune the baseline model on the new, ***unlabeled*** data period. Try enhancing image colors by using the infrared channel and using only maximally contrasting categories to improve deep learning training accuracy. Experiment is on-going.

## Education & Certification:

- **University of Chicago**, Booth School of Business, **M.B.A.**, (concentrations: finance, statistics, econometrics)
- **Global Association of Risk Professionals (GARP)**, Certified Financial Risk Manager (**FRM**)
- **Mount Holyoke College**, **B.A.**, ***High Honors in Economics***, (major: economics, minor: physics)

## Quantitative Experience Highlights:

**SEC** (U.S. Securities and Exchange Commission), **Economist, Financial Analyst**

- Calculated on behalf of the SEC, the potential risk on MBS (mortgage-backed securities) trading portfolio at large U.S. banks. Received data files from each firm, wrote computer code to transform and clean the data, then conducted statistical analyses. Communicated my finding to SEC and SIA (Securities Industry Assoc.).
- Approved the risk controls on a $20 billion Salomon Brothers portfolio, which stayed within their tolerance.
- Issued a warning for a $500 million potential loss on Merrill Lynch's portfolio, which was beyond their tolerance. Company disputed my findings, but ended up reporting a $500 million loss 6 months later.
- Primary analyst on SEC's enforcement action against Bankers Trust. My response to Defense during SEC's Wells meeting lead to the Defense's withdrawal, followed by settlement 2 weeks later for $6 million. Losing this case lead to the Company also losing over $1 billion in similar lawsuits and a bankruptcy 1 year later.
- Made significant contributions to SEC's regulatory policy on MBS, options, swaps and other derivatives.

**KPMG LLP** (Big-4 accounting firm), **Senior Manager**

- Assisted a diversified energy company calculate the correct risk and develop an appropriate VaR (Value-at-Risk) model for their oil products spread trading portfolio. Used numerical approximation methods to custom fit a bimodal (two humps) probability density function to their trading data. As a result, Client was able to secure a $5 billion corporate debt.
- Wrote **Excel VBA** code to calculate loss from excessive trading. Supervised a team to develop supporting arguments and analyses used by lawyers. Client successfully settled a $128 million lawsuit for $50 million.

**Crescat Capital LLC, External Risk Consultant**

- On behalf of the Client, developed a portfolio-wide risk management system based on **Bloomberg Terminal** PORT application and Client's existing macro-investment strategy. Assisted writing a marketing brochure.