# Xavier Yang

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## Projects

### *Hand-written Digit Recognition*

- Developed a CNN using the PyTorch framework to recognize handwritten digits from the MNIST dataset. This project involved data preprocessing, model architecture design, training with backpropagation, and performance evaluation

### *Crossword Lottery Evaluator* (Ongoing)

- Developing a mobile application integrating Computer Vision to capture and analyze Crossword Lottery's word-pool to increase buyer's winning rate

### *Sentiment Analysis of the COVID-related Reddit Posts*

*(Paper: https://arxiv.org/abs/2205.06863)*

- **Data Collection:** Gathered comments using Reddit APIs
- **Data Preprocessing:** Filtered and pre-processed raw datasets
- **Topic Modeling:** Applied gensim LDA model for topic modelin
- **Sentiment Classification:** Used NLTK VADER and TextBlob to classify comments
- **Validation:** Sampled and calculated Cohen's Kappa score
- **Machine Learning:** Applied various algorithms using Python and scikit-learn: confirmed results with Weka

## Location

Toronto/Markham, Ontario
**(willing to relocate)**

## Portfolio

https://krancce.github.io/

## Education

Bachelor of Computer Science

## Skills

C# Java Python C++ HTML SQL Lua JavaScript .NET Unity-Engine Android-Studio PyTorch Computer-Vision Natrual-Language-Processing

## Experience

### *Software Developer*

---CAST Group (Feb 2023 - Mar 2024)

1. **Developed 3D Tracking System Integration**:
   - Created a product that seamlessly integrates a 3D tracking system with PTZ (Pan-Tilt-Zoom) cameras.
   - Enabled automatic camera tracking of targets, enhancing user experience during live shows.
2. **Event-Driven Camera Control:**
   - Designed and implemented an event system within the software.
   - Users could define various camera actions and associate them with triggerable events.
   - Resulted in dynamic camera behavior based on specific conditions during shows.
3. **Serialization System Implementation:**
   - Developed a robust serialization system.
   - Stored in-game content, user preferences, and critical data efficiently.
   - Ensured seamless data persistence across sessions.
4. **User-Friendly GUI and Drag-and-Drop Functionality:**
   - Utilized the software's GUI (Graphical User Interface) to enhance usability.
   - Implemented a Drag-and-Drop system for easy manipulation of UI elements.
   - Improved overall user experience and productivity.
5. **Bug Fixing and Communication Enhancement:**
   - Resolved NDI (Network Device Interface) communication issues between the software and PTZ cameras.
   - Ensured smooth data exchange and reliable camera control.
6. **Multilingual Support and Customer Engagement:**
   - Contributed to the translation system by adding Chinese Simplified and Chinese Traditional languages.
   - Conducted demos and presentations for customers, educating them about the product's features and benefits.