

# Pian Pawakapan

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## EDUCATION

**Cornell University**, College of Arts and Sciences, Ithaca, NY  
B.A. in Computer Science, Class of 2021, GPA : 3.82  
Rawlings Presidential Research Scholar (RCPRS)

## EXPERIENCE

May-Aug 2020

### Computer Vision Intern @ Siriraj Medical Research Center (SiMR) [\[link\]](#)

- Designed and developed deep learning algorithms for evaluating the ISUP grade & Gleason score of megapixel biopsy image files (.tiff, .svs)
- Implemented and compared various techniques for improvement - false negative reduction, hard-case/attention-based sampling, fast hierarchical tiling for locating regions of interest

May-Aug 2020

### Front-End/Data Visualization Intern @ Boonmee Lab/ELECT [\[link\]](#)

- Worked with D3.js, Vue.js, Python, and HTML/CSS/JS for a data journalism project, from web scraping, data cleaning & analysis, to data visualization and web design.
- Project on data analytics for the company's chatbot feature, involving ULMfit classification, sentiment analysis, keyword extraction, and similarity search for NLP data.

Sep 2019-Mar 2020

### Data Science Intern @ Visenze

*Data Science Team - Singapore*

- 2-3 projects on end-to-end ML for CNN models, from data sourcing, model training, dataset iteration, error analysis, architecture tuning, and model deployment
- Other projects on POC/full-workflow/toolkit library additions in PyTorch, involving CycleGANs, domain adaptation, semi-supervised learning, and confidence calibration for CNNs, etc.

May-Aug 2019

### Research Engineer Intern @ SRI International

*Vision and Learning Group - Princeton, NJ*

- Wrote PyTorch research code for experiments on architecture design, adversarial robustness, model interpretability, and visualizing feature representations on Neural ODEs and ResNets.
- Trained knowledge-graph question-answering models, using LSTMs and GNNs on extracted subgraphs from YAGO & Wikidata, and developed a frontend using Python Speech-to-Text for user commands

Aug 2018-May 2019

### Undergraduate Researcher - Cornell University (Wei-Lun Chao, Prof. Kilian Weinberger)

- Improving depth-estimation for CV in autonomous driving. Wrote PyTorch & TensorFlow to modify SOTA CNN architectures to run with different training & inference modes (un/semi-supervised with stereo/video image sequences, etc.)
- Improved depth prediction by 20% at long ranges over supervised learning benchmark
- Worked on amodal semantic segmentation. Designed methods for synthetic data generation, model training, and implemented architectural changes for image segmentation models (DRNs)

Aug 2018-May 2019

### Research Team Member - Cornell University Vision and Learning Group (CUVL)

- Fast implementation of research ideas in PyTorch, and paper reading/presentations on areas such as adversarial attacks, graph neural networks, image captioning
- Involvement led to workshop submission: [Intermediate Level Adversarial Attack for Enhanced Transferability](#)

Aug-Dec 2018

### Teaching Assistant, CS 4780 (Machine Learning for Intelligent Systems)

- Graded homeworks, assisted students, and explained concepts on supervised machine learning

## PROJECTS

May-Aug 2020

### Artistic Style Search [\[link\]](#)

- Developed a webapp for searching similar artwork for user images, indexed from over 100,000 images from the MET, Rijksmuseum, and Europeana Open Access images
- Designed and implemented a deep-learning-based heuristic for artistic style similarity, with a style transfer extension for transforming user images into artworks
- Built a RESTful Python backend server using Flask & Pytorch, along with a user interface in Javascript using Vue.js

*Nov 2019-Jan 2020*

**Kaggle - Data Science Bowl 2019 [[link](#)]**

- Achieved top 2% competition performance via LightGBM, feature engineering & selection, Bayesian optimization, model stacking, and adversarial validation

*Aug-Dec 2017*

**Critterworld (CS 2112 Project)**

- Built and designed RESTful API server in Java for game engine, and GUI client in JavaFX for user interaction
- Developed a parser and executor for in-game language commands, parsing tokens into an AST and executing them to update the server game state
- Designed and developed multiple components and classes according to OOP best practices and design principles

**COURSES**

Honors Object-Oriented Programming • Analysis of Algorithms • Computer Systems • Operating Systems  
• Computer Vision • Machine Learning • Functional Programming • Computer Graphics  
• Basic Probability • Theory of Statistics • Combinatorics • Linear Algebra • Number Theory

**LANGUAGES/  
FRAMEWORKS**

Python • R • SQL • Javascript • Java • C • Ocaml  
PyTorch • TensorFlow • Keras • Scikit-learn • Vue.js • D3.js • HTML/CSS