

# ERIC CHHEANG

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## EDUCATION

University of Kentucky / Lexington KY

**Expected Grad:** May 2020

B.S. Computer Science | Minor in Mathematics

Coursework: Calculus I-IV, Statistics, Algorithms Design/Analysis, Database System, Networking, Intro to AI, Machine Learning, Optimization

## EXPERIENCES

**Machine Learning Engineer Intern** | Riverside Research | Dayton, OH

May 2019 – Aug 2019

- Researched and implemented various feature extractors (MobileNet, InceptionV3) and object detection algorithms (SSD, YOLO) with satellite image datasets. Successfully completed client project that result in additional tasks and funding for the company.
- Wrote Python scripts to pre-process and manipulate images for object-orientation prediction for improved network accuracy. Standardized the orientation angle of images to improve model performance and addition dataset creation.
- Explored methods to improve the security of machine learning models against adversarial examples such as adversarial training, defensive distillation, and synthetic data generation with domain randomization.

**Research Assistant** | University of Kentucky

Sept 2018 – May 2019

- Collaborated with local and remote Graduate students in creating a reliable communication application for post-disaster communities.
- Led the project of implementing a novel routing algorithm to improve ad-hoc network performance of an Android app with Java.
- Improved network longevity by ~50% over current routing protocols in disaster scenarios by integrating a cluster-based topological routing system for connection topology and enhancing the message priority system.

**Data Analyst** | University of Kentucky Healthcare

Nov 2018 – April 2019

- Completed many analytics research projects in an agile scrum team and piloted intake-meetings for insights into medical research.
- Conducted discovery of various data sources by querying healthcare-databases with SQL and Netezza to present with Tableau.

## PROJECTS

**Music Streaming Website** | Personal

**In-Progress**

- Developing a website with music streaming capabilities using PHP, JavaScript, and MySQL. The site currently contains features such as user log-in and registration using a local Apache Web Server and MySQL databases.
- The site will add music streaming, song and artist search, lyric generation, and additional features while focusing on the Cambodian market.

**Crash Scene Recreation** | Capstone Project

**In-Progress**

- Collaborating in a team to complete a client project that provides software specialization in computer aided design for crash and crime scene recreation, storage of captured data, and providing access to select users.
- My role is converting and updating an existing cloud-based database into a secure local database that links mobile to desktop applications. Also tasked with adding robust security and privacy features against unauthorized use.

**Smart Email Generator** | Purdue University Hackathon 2018

- Developed a python Bot that utilizes speech-to-text and conversation GUI to generate a professionally written email based on user speech.

**Google Home Medical Bot** | University of Tennessee Hackathon 2018 – Best Presentation

- Designed a chatbot for medical scenarios and implemented a state-machine via Google's DialogFlow APIs for Medical Students.

**First-Author Paper** | Microbiology Resource Announcement (In-process of submission)

- Discovered over 12,000 novel genes of rice-blast pathogen, Pyricularia Oryzae using various Linux-based bioinformatics software tools.

**Hypertension Prediction** | Personal

- Handled the entire process of research, data collection, pre-processing, network architecture design, regularization methods, and tuning hyper-parameters to achieve desired complexity, performance, and robustness for hypertension prediction of patients.

## TECHNICAL SKILLS

**Languages:** Python, C++, SQL, PHP, JavaScript, Java, R, HTML, CSS

**General:** Linux, Git, MySQL, Computer Vision, Tableau, Agile Methodologies

**Machine Learning:** Keras, Sklearn, TensorFlow