

# Kenan Deng

University of Toronto

Canada

[dknyxh@gmail.com](mailto:dknyxh@gmail.com)

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## **EDUCATION**

### **Honours Bachelor of Science in Computer Science (in progress)**

University of Toronto, St. George campus

September 2013 - June 2018

- Current cGPA 4.0
- Computer Science specialist. Focus in Artificial Intelligence and Computer Vision

## **RESEARCH EXPERIENCE**

### **Episcan3D**

Dynamic Graphics Project lab, University of Toronto

September 2016 - April 2017

- Researched on imaging methods under epipolar geometry and its various applications using this computational imaging research prototype
- Experienced on stereo calibration, working with timing control of rolling shutter cameras, laser projectors, 3d reconstruction using structured light.
- Developed an automated way to calibrate the episcan system which reduces calibration time
- Provided maintenance to the episcan system and added modification to the system to stabilize the imaging result

### **Software Defined Networking Controller Application**

Research project course, University of Toronto

January 2016 - April 2016

- Developed a router and a load balancer based on a distributed SDN controller called beehive network controller using GoLang in group of two people
- Designed a multi-layer decentralized router/loadbalancer hierarchy utilizing beehive structure which assigns routing task to each hive controller and utilized a master level router that resolves pathing problem between different hives located in different servers

## **WORK EXPERIENCE**

### **Software Engineering Internship**

May 2016 - April 2017

Modiface Inc, Toronto, ON

- Lead developer of multiple augmented reality apps which do virtual makeup using cameras on iOS system using Objective-C, which later successfully launched into App Store
- Facilitated research and development of a new technique that greatly improved live rendering effect under different lighting conditions
- Designed an application which does nail polish rendering using a leap motion and a projector
- Provided technical support to backend structure of the current application using Javascript and PHP, resulting in overall improvement and more features of backend content management system

- Improved existing augmented reality effects and came up with new ways of rendering for different types of makeup using OpenGL, resulting in a more realistic rendering on face

## **RELATED COURSES**

### **CSC411H1 Machine Learning (A+)**

- Regression, clustering, neural networks, reinforcement learning

### **CSC320H1 Introduction to Visual Computing (A+)**

- Camera model, image representation, edge detection, SIFT

### **CSC321H1 Neural Networks(A+)**

- Convolutional neural networks, recurrent neural networks, Markov Chain Monte Carlo, RBM

### **CSC384H1 Introduction Artificial Intelligence(A+)**

- Uninformed/heuristic search, logical representation, Bayes Nets

### **CSC418H1 Computer Graphics(A)**

- Rasterizing, 3D transformations, ray tracing, animation, OpenGL

### **CSC485H1 Computer Networks(A+)**

- Packet switching, socket programming, network software, hardware, and protocols, network naming and addressing, congestion control schemes, software-defined networking, network security

### **CSC2503H Foundations of Computer Vision (Graduate course in progress)**

- Camera system geometry, image acquisition, robust estimation, image matching, Markov random fields and deep learning for computer vision.

### **CSC420H1 Introduction Image Understanding(in progress)**

- Image formation, features, object and scene recognition and learning, multi-view geometry and video processing

## **SKILLS**

Programming: Python, TensorFlow, OpenCV, Matlab, C++, C, Java, OpenGL, Web programming

Language: proficient in English, Mandarin

Github: <https://github.com/dknyxh> , portfolio: <https://dknyxh.github.io/>

## **HONORS**

Dean's List

earned every academic year since 2013

U Of T Scholar

earned every academic year since 2013

Lawrence And Sharen Ho International Scholarship

earned every academic year since 2013

## **PUBLICATION**

El-Hachem, N., Gendoo, D.M., Ghoraie, L.S., Safikhani, Z., Smirnov, P., Chung, C., **Deng, K.**, Fang, A., Birkwood, E., Ho, C. and Isserlin, R., 2017. Integrative cancer pharmacogenomics to infer large-scale drug taxonomy. Cancer Research, 77(11), pp.3057-3069.

- Built a web based data visualization system on drug taxonomy using angular and node.js to help visualize the relationship between different drugs