Krittisak Chaiyakul

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Education

- **University of Wisconsin–Madison** — Madison, WI
  B.S. Computer Science — *Sep 2015 - May 2019*
  Certificate Mathematics
  Cumulative GPA : 3.820 / 4.00 — Major GPA : 3.933 / 4.0

Research

- **Department of Biostatistics & Medical Informatics @ UW–Madison** — Madison, WI
  Research Assistant — *Jan 2018 – May 2019*
  Research Intern — *May 2019 – Present*
  - Analyzed and applied machine learning on the Cancer Genome Atlas Head-Neck Squamous Cell Carcinoma (TCGA-HNSC) data collection by investigating clinical data, genetic data, and radiological images.
  - Studied and identified proteins and metabolites that correlate to a change in hemolysis in frozen blood over a certain period using machine learning and statistical method.
  - Studied and identified genes that are significantly changed based on signaling proteins during pregnancy by investigating microarray data.
- **Department of Computer Science @ UW–Madison** — Madison, WI
  Research Assistant — *Jan 2018 - May 2018*
  - Studied techniques on defensing adversarial attacks on deep learning and applied Gaussian noise to increase robustness of the neural network against adversarial attacks.
- **Human-Computer Interaction Lab @ UW–Madison** — Madison, WI
  Research Assistant — *May 2017 - Aug 2017*
  - Studied machine learning techniques to provide hand activity level (HAL) recognition and real-time task descriptions in a way that both human and robot workers can interpret and execute through the use of Myo Armband.

Employment

- **Facebook** — Menlo Park, CA
  Software Engineer Intern — *Jun 2018 – Aug 2018*
  - Applied machine learning models for importance ranking and dropping noisy results on Search Engine Results Pages.
  - Analyzed and interpreted the certain features to identify patterns and trends to improve the metric on results pages ranking.

Projects

- **Identification of Invasive Ductal Carcinoma in Breast Cancer**: Implemented and explored the performance of VGG, ResNet, and Inception models for detecting IDC in whole mount slide images scanned at 40x for indicating the regions which contain the IDC in full-size images. The project report and code can be accessed here respectively: [https://goo.gl/2B38b3] [https://git.io/fxNGf]
- **A Deep Learning Approach to Burst Detection**: Implemented and explored the performance of various Convolutional Neural Networks (CNNs) for detecting bursts from the images of brain (spiking profiles) generated by electrophysiology experiments. The project report can be accessed here: [https://goo.gl/njFgf1]
- **Classifying 3-Dimensional Shapes with Convolutional Neural Networks**: Implemented Convolutional Neural Networks (CNNs) with Keras for 3-dimensional shape recognition, which particularly was trained and tested on 3-dimensional spheres, tori, cube, sphere and square torus that had undergone a range of standard distortions. The project report and code can be accessed here respectively: [https://goo.gl/CAF9ke] [https://git.io/fxNs7]

Honors And Awards

Royal Thai Government Scholarship, fully-funded undergraduate & graduate scholarship from Royal Thai Government for highschool students selected as Thailand representatives to participate in the International Olympiad in Informatics.
ACM-ICPC World Finalists, the 40th and 41th ACM-ICPC World Finals 2016 and 2017
Bronze Medals, the 25th and 26th International Olympiad in Informatics 2013 and 2014

Selected Coursework

Bioinformatics, Biostatistics, Medical Image Analysis, Deep Learning, Machine Learning, Artificial Intelligence, Statistics, Algorithm, Data Structure, Optimization, Operating System, Database, Compiler, Computer Graphics

Programming Skills

- **Languages**: C/C++, Python, R, Java, MATLAB, SQL
- **Machine Learning Packages**: Keras, TensorFlow, scikit-learn