TUNG HOANG

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EDUCATION

University of Illinois at Chicago (UIC), Chicago, IL
Doctor of Philosophy in Applied Mathematics, GPA: 3.73/4.0 *December 2017*
Master of Science in Computer Science, GPA: 3.8/4.0 *May 2017*
Master of Science in Pure Mathematics, GPA: 3.92/4.0 *May 2011*
Selected courses: Machine Learning, Data Mining and Text Mining, Artificial Neural Network, Artificial Intelligence I, Database Systems, Computer Systems, Operating Systems, Software Design with Java, Statistical and Probability Theory, Computer Algorithms I and II, Computational Geometry, and Graph Theory.

WORK EXPERIENCE

LEAD DATA SCIENTIST, Aegis AI, Chicago, IL *May 2018 - present*
- Implemented deep learning computer vision using Kinesis and YOLO on AWS to improve security camera systems.
- Managed data labeling and model training process. Proposed and improved training data led to 90% accuracy.
- Improved model with several tweaks on configuration of the deep network. Achieved 94% accuracy.

VISITING LECTURER IN STATISTICS, UIC, Chicago, IL *January - May 2018*
- Project: Training a webcam deep learning classifier to auto-capture and save students' exam scores based on identification number. Expected to reduce time to enter exam scores from 1.5 hours to 15 minutes for a class of 200 students. Leveraged **Keras**, **TensorFlow**, **OpenCV,** and **OCR** (Optical Character Recognition). Written in **Python**.

QUANTITATIVE ENGINEER INTERN, Ekistics Ventures, Chicago, IL *January - April 2018*
- Employed blockchain technology to enable users to perform integrity check of codes downloaded from developers' websites by comparing codes' hashes with hashes stored on the blockchain. Provided an additional layer of protection to software development. Built on top of **Ethereum** using **ERC20** token standard. Written in **Node.js/ Solidity**.

RESEARCH ASSISTANT, UIC, Chicago, IL *2014 - 2017*
- **Neural Network-Digit Classification:** Implemented backpropagation algorithm with gradient descent. Designed and trained a 1-hidden layer neural network to classify MNIST dataset. Achieved 95% accuracy. Written in **Matlab**.
- **Machine Learning-Robotic Arm Dynamic Re-Training:** Improved an adaptive classifier using Linear Discriminant Analysis for a single degree of freedom without affecting the rest. Achieved 98% accuracy. Written in **Matlab**.
- **RSA Encryption/ Decryption:** Implemented a fast algorithm for data encryption/decryption using public and private key. Built user-defined BigInt class for big integers and respective arithmetic operations. Written in **Java**.
- **Text Mining-Spam Detection:** Implemented a spam messages classifier using **Naive Bayes** model. Achieved 90% accuracy. Implemented another classifier using **Logistic Regression.** Achieved 92% accuracy. Written in **Matlab.**
- **Object Oriented Design-Monopoly Game:** Implemented the board game Monopoly, with classes to model players, the game board, and users' interaction. Leveraged inheritance and polymorphism in OOP. Written in **Java**.
- Applied Artificial Neural Network (**ANN**) to detect protein-coding regions within DNA sequence. Designed **P**ower **S**pectrum-**M**oment method to classify genomes and genes using Discrete Fourier Transform and power spectrum, improved speed up to 15 times while keeping accuracy on several cases. Written in **Matlab/ Python/ R.**

SKILLS

- *Proficient:* Java, Python, C, C++, Matlab, F#, SQL, C#, ADO.NET.
- *Prior experience:* R, HTML5, CSS, JavaScript, Node.js, Threading.

PUBLICATION

- **Hoang, Tung**, Changchuan Yin, and Stephen S-T. Yau. "Numerical encoding of DNA sequences by chaos game representation with application in similarity comparison." *Genomics* (2016).
- **Hoang, Tung**, et al. "A new method to cluster DNA sequences using Fourier power spectrum." *JTB* (2015).

AWARDS/ ACTIVITIES

- Yeuk-Lam Yau-Leung Memorial Scholarship *2017*
- Certificate of Peer Facilitator at the 2015 International TA Orientation at UIC *2015*
- Student Travel Award for FNFYT, CIMPA *2010, 2012*
- Vietnam Education Foundation Scholarship *2009*
- Scholarship of Rencontres du Vietnam *2006*
- National Mathematics Olympiad Gold Medal, Ministry of Education and Training, Vietnam Mathematics Society (rank 2/400) *2002*